



TAMPERE UNIVERSITY OF TECHNOLOGY

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**OPTIMIZING THE SUPPLY CHAIN BY THE COLLABORATION  
BETWEEN COMMERCIAL AND HUMANITARIAN SECTORS**

Master of Science Thesis

Prof. Jarkko Rantala has been appointed as the examiner at the Council Meeting of the Faculty of Business and Technology Management on January 11, 2012.

## ABSTRACT

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Several articles related to the humanitarian logistics have been recently published. The international logisticians are turning their focus, or at least extending it, to this industry, which shows a fast development in the last years, especially after the tsunami of 2004.

The aim of this work, focused in the collaboration between the private sector and the humanitarian organizations, is the study of possibilities of collaboration as well as the benefits and problems that can appear (might arise) in this relationship.

To develop this project, it is important to start knowing the actual economic crisis situation involved in all the decisions made in the commercial sector and can affect also the humanitarian one. The work explains how this affects the environment where both supply chains are developing their operations.

After an individual analysis about each supply chain, this project will show the reader the strengths and weaknesses of each sector, and how combine them to obtain a better model. For example, adding the experience and resources of the private sector to the humanitarian organizations and incorporating the flexibility and agility of humanitarian groups to the private field.

A model will be added to select the correct partner. This will be useful in order to know the steps to follow from the moment a company decides to partner with other organization as part of its strategy.

The risk management is other of the critical factors for both sectors that will be explained, not only in the case of humanitarian disasters but also for the commercial sector where it can be developed learning from the disaster relief agencies.

For this work, different research techniques have been used like the scientific literature review, expert interviews, and questionnaires. The information collected was analyzed by tools as PEST or SWOT analysis. By using graphs and figures, the interpretation of the information will be easier for the reader.

## PREFACE

This Master of Science Thesis was started during my Erasmus stay in Tampere University of Technology (TUT), Tampere, Finland. It was written in the Spring Semester of Academic Year 2010/2011 and in the Autumn and Spring semesters of Academic Year 2011/2012.

My interest about the topic emerged while I was attending the courses “Supply Chain Management” and “Supply Chain Management in Disaster and Emergency Situations” imparted at TUT.

Through the documentation of this work, I found a lot of articles and books focused on humanitarian or commercial supply chains but only a few really mixing these sectors. This Thesis collects, within the same document, the actual situation of both worlds nowadays as well as their future opportunities of collaboration.

The organization of the work allows the reader to understand the actual situation of both supply chains better. Then, it continues by giving recommendations on how to improve this situation. Finally, it ends up with a survey that adds the opinion of the society about this topic.

I hope this work will be as interesting and useful for the reader as it has been for me to write it.

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## ABBREVIATIONS AND NOTATION

CEO: Chief Executive Officer

CPFR: Collaborative Planning Forecasting Replenishment

CSC: Commercial Supply Chain

CSCMP: Council of Supply Chain Management Professionals

CSR: Corporate Social Responsibility

DRT: Disaster Response Team

DSS: Decision-Support System

ECB: Emergency capacity Building

ECR: Efficient Consumer Response

EPC: Electronic Product Control

ERC: Emergency Relief Coordinator

ERP: Enterprise Resource Planning

ERT: Emergency Response Team

ESCE: European Supply Chain Excellence

EU: European Union

GARD: Get Airports Ready for Action

GDP: Gross Domestic Product

HAP: Humanitarian Accountability Partnership

HCS: Humanitarian Common Services

HFA: Hyogo Framework for Action

HL: Humanitarian Logistics

HLS: Humanitarian Logistics Software

HRR: Humanitarian Response Review



HSC: Humanitarian Supply Chain

HSCM: Humanitarian Supply Chain Management

IASC: Inter-Agency Standing Committee

IFRC: International Federation of Red Cross and Red Crescent

ILO: International Labour Organization

IOSCM: Inter-Organizational Supply Chain Management

ISO: International Organization for Standardization

IT: Information Technology

KPI: Key Performance Indicator

LET: Logistics Emergency Team

LSS: Logistics Support System

MC: Mitsubishi Corporation

MoU: Memorandum of Understanding

MSF: Médecins Sans Frontières (Doctors Without Borderlines)

NESA / HVK: National Emergency Supply Agency / Huoltovarmuus Keskus

NGO / NPO: Non Governmental Organization / Non Profit Organization

OCHA (UNOCHA): (United Nations) Office for the Coordination of the Humanitarian Affairs

ODA: Official Development Assistance

OECD: Organization for Economic Cooperation and Development

PAHO: Pan-American Health Organization

PDCA: Plan, Do, Check, Act

PEST: Political, Economic, Social, Technology

PPP: Private-Public Partnership

R&D: Research and Development

RFID: Radio Frequency Identification

SQM: Supply Quality Management

SR: Social Responsibility

SUMA: Humanitarian Supply Management System

SWOT: Strengths, Weaknesses, Opportunities, Threats

TAMK: Tampere University of Applied Sciences

TQM: Total Quality Management

TUT: Tampere University of Technology

UN: United Nations

UNDP: United Nations Development Programme

UNGCO: United Nations Global Compact Office

UNHCR: United Nations High Commissioner for Refugees

UNICEF: United Nations International Children's Fund

UNJLC: United Nations Joint Logistics Center

UPM: Universidad Politécnica de Madrid

US / USA: United States / United States of America

VAT: Value Added Tax

WFP: World Famine Program

WHO: World Health Organization

## 1. Introduction

Humanitarian logistics are a strong focus of attention nowadays. Several articles related to humanitarian logistics have been recently published. The international logisticians are turning their focus, or at least extending it, to this industry. People are recognizing the opportunity that this sector offers not only in the humanitarian sector, but also for business.

Besides, humanitarian logistics catch people's attention due to its fast development in the last years, especially after the tsunami that devastated the coast of Thailand in 2004. That was the starter point for the new era in humanitarian logistics. Since 2004 several tools and strategies have been developed thinking directly about the humanitarian sector.

However, the situation of humanitarian logistics is still far away from commercial logistics. The efficiency of the commercial sector is a reference for humanitarian logisticians, but it is not easy to implement commercial logistic methodologies in the humanitarian sector due to the particularities of its activity.

On one hand, the relative youth of the humanitarian logistics professionalism, with its correspondent lack of experience, the lower grade of infrastructures and the high uncertainty of its environment, are some of the challenges that the humanitarian sector have in front of it.

On the other hand, the commercial sector is not empty of challenges. The low flexibility and adaptability of its structures, based on cost efficiency, could take away the competitive advantage required to ensure a market share for the company.

The aim of this work, focused in the collaboration between the private sector and the humanitarian organizations, is the study of possibilities of collaboration that both sectors have: How they can learn from each other, improve their activities performance, and obtain their respective goals.

This collaboration is not exempt of problems that can arise when they start to work together. The different cultures of both sectors could make more difficult the establishment of relationships due to a lack of understanding.

Suggesting partnership as a way of collaboration, this work will explain this strategy and will add some important pieces of advice that can allow the success of the activities shared.

One of the critical factors identified through the researching period of this work was risk management. For this reason, one point related to this topic has been added to the study. Risk management is an important tool that should be used by both humanitarian and commercial sectors. The high uncertainty of the humanitarian sector justifies its use, but several examples show its importance in commercial companies too.

To obtain information for this work about the actual situation, two different professionals were interviewed.

To complete the work, consumers and possible future professionals in the logistics field, were questioned about this topic too. They show the opinion of the society, the real factor of change. People who buy products or services sold by companies, and help humanitarian projects with money or as volunteers, are the ones who can decide the future of both sectors by giving, or denying, their support. For this reason, knowing their opinion is required before establishing collaborations that can change the strategies of the organizations.

## 1.1. Research Questions

The main idea of this work was to answer the question:

- Is there a real possibility of improving supply chain management mixing the commercial and humanitarian logistics skills?

And, if it is possible:

- How to do it?

However, from these questions, several others were used to build the final structure of this study:

- Is the present situation, or economical crisis in general, an opportunity for new investments related with the humanitarian sector? Or is this an unnecessary cost that must be reduced until better economic cycle?
- What is the actual situation of both sectors in present time?
- What are the benefits of a common collaboration for both sectors?
- What kind of relationships can be developed between commercial and humanitarian supply chains? Which one could be the best one? Why?

## 1.2. Research Methodology

The research strategy for this work was adapted from the steps enunciated by Eisenhardt (1989) for case study researches: Getting started, selecting cases, crafting instruments and protocols, entering the field, analyzing data, shaping hypotheses, enfolding literature and reaching closure. However, the methodology used cannot be considered exactly a case study research. Characteristics from action research methodology were also used for this work (following a cycle of history, background, theory, phenomena and results). It could be said that the methodology followed was a mixing of both, where the researcher was always an observer.

Both methodologies were selected thinking about the topic selected and the main objectives of this work.

Carrasco and Carrasco (2007), citing Yin (1984), affirm that case study research is recommended for researches focused in relatively new topics where the principal questions are “why?” and “how?” Yin (2012) explains that this methodology examines the context and different characteristics related with the cases studied trying to understand them. Carrasco and Carrasco (2007) remark the possibility of obtaining holistic results (instead of reductionist ones) by the understanding of these cases.

However, case study methodology could be considered too descriptive while the action research also obtains more practical results for their implementation (Brydon-Miller et al. 2003). The action research methodology can obtain better results from cases without specific problems because the idea is to explore the nature of practices and try to improve these practices (Waters-Adams 2006).

The first step was to create the research questions. This step has been reviewed during the work due to the secondary questions that the collection of new data was producing. This fact reflects the flexibility and adaptability required at the beginning and that is also the reason why the questions start being more general to conclude with concrete ones. However, it was always a reference to fix the goals of the study and useful for maintaining the focus of the work.

The initial case selection tried to cover the sectors with any implication in the topic: A humanitarian organization, a public institution related with logistics, and a logistics company. After studying the possibility of interviewing professionals from these sectors, the organizations selected had the international behaviour searched for this work without forgetting the importance of Finnish data, keeping in mind where this work was being developed. However, the interview with the logistics company was not possible and the data from this point of view was collected from other works and the official webpage of these companies.

Due to the evolution of the work other cases were required, for this reason it was selected also the partnership between TNT and WFP that, together with DHL case, was useful to analyse the partnership between commercial and humanitarian organizations. For studying the collaboration developing risk management programs, it was studied the case of UPM and Haiti's government.

About the techniques and protocols, for this work, the main research techniques used have been scientific literature review, expert interviews, and a survey based in a questionnaire to a sample group selected from TUT and TAMK students. The literature review was focused in books and articles published during the last ten years in order to avoid the obsolescence of the ideas exposed and also due to the impossibility of find important research about humanitarian logistics earlier. The aim of the work was also to search different sources to obtain more ideas increasing by this way the value of the data collected.

Entering the field, the first step was to study the definition of supply chain without distinguish between commercial and humanitarian one. However, due to the lack of interest historically shown by the authors of logistics' literature about the humanitarian supply chain, this documentation was referred basically to commercial supply chain. Subsequently, the research was focused in the humanitarian sector and its own characteristics.

For analyzing the data collected, other useful tools were included to this work: PEST analysis (it was the reference for making an external analysis of the environment during this economical crisis period) and SWOT analysis (this one used to know what characteristics could be seen as strengths or opportunities for each sector, and which ones are weaknesses or potentially risky). Graphs, diagrams, and tables were used because, as Miles and Huberman (1984), cited by Carrasco and Carrasco (2007) explain, these tools allow the author to present data collected in an easier way showing the relations between them and clarifying their structure.

Once the previous study of both supply chains and different interviews were maid and the main factors related with this work were analyzed, two conclusions look especially relevant. The first one was the confirmation of the initial idea about the mutual benefits that could achieve the collaboration between humanitarian and commercial organizations mixing their logistic skills. The second one was the importance of develop a proper risk management program for both sectors. In order to make a more deeply research about these conclusions, It was started another scientific literature review.

The study focused in common collaboration started being a general research without filter any possibility of interaction between organizations. However, after realize the opportunities that a strong relationship can generate, the work analyzed the partnership cases. Trying to improve the value of this analysis, different advices for organizations that could be planning a partnership were added in this point, especially focused in partner selection due to the identification of this decision as critical for a successful

partnership. For risk management case, the methodology followed to study it was similar to the previous one.

Finally, in order to know the opinion that the society can have about the topic of this work, it was made a survey using a selected sample group. Despite the survey was not made at the beginning of this work, the answers collected support the conclusions obtained earlier. However, more conclusions can be extracted from the survey's results; some of them could be interesting future research, like the importance of visibility as a critical factor to achieve the goals expected by each organization.

The conclusions of this work are based on evidences showed by the data collected from previous studies, cases' analysis and the opinion collected by the interviews and survey. The topic of this work allows further researches, for this reason, some possible study fields have been added at the end of the conclusions with the idea of encouraging researchers to continue developing it.

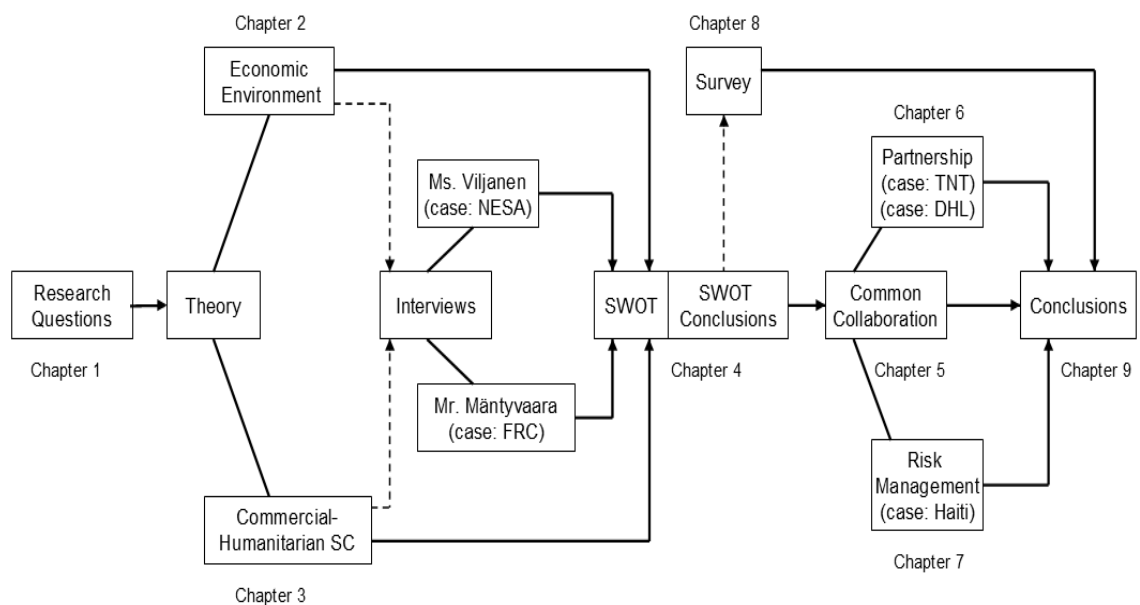


Figure 1. Research Methodology and Work Structure scheme. Source: Own elaboration.

### 1.3. Structure

This work is divided in 9 chapters, including the introduction:

#### Chapter 2. Brief Analysis of Crisis Environment

This point shows an external analysis where the economy (with the economic crisis that is happening nowadays) is taken as the core factor to explain recent changes in political, social, and technological fields. This chapter finishes with the explanation of what companies can do now and why the supply chain is crucial for their success.

#### Chapter 3. Characteristics of Commercial and Humanitarian SC

This chapter is divided in Commercial Supply Chain and Humanitarian Supply Chain. Both supply chains are defined and analyzed individually. The chapter is focused in the differences between them with special interest in factors that can offer a comparison. However, other information is also shown for better understanding of the unique situation of each supply chain.

#### Chapter 4. Analysis of SC Characteristics

This point is a SWOT analysis, for each sector. With this tool, the idea is to show the different strengths, weaknesses, opportunities, and threats that affect each sector. This analysis is used for the whole sector. Therefore, the strengths and weaknesses--which are factors of the company's internal analysis--have been selected from common areas in the majority of organizations that make up the industry.

#### Chapter 5. Developing Relationships between Organizations

This chapter starts explaining the different collaborations that can be used for inter-organization relationships. After that, the chapter focuses in the commercial-humanitarian mix and the benefits that each one can obtain from it (keeping in mind the results of Chapter 4).

#### Chapter 6. The Partnership as Commercial-Humanitarian Relationship Option

This point analyses the partnership as the most interesting way of common collaboration. After explaining positive and negative factors of this kind of inter-organization relationships, some pieces of advice for partnership are shown with a special focus on the partner selection. Finally, two cases of actual cross-sector partnerships are given at the end of the point.



## Chapter 7. Risk Management as Essential Tool in SC

This chapter is focused on risk management. It shows arguments for its implementation and some recommendations to do it properly. Some examples are given to show the importance of risk management in both the humanitarian and the commercial sectors.

## Chapter 8. Survey: People's Opinion about HSC and CSC

This chapter shows the process of the survey given to 30 students from Tampere University of Technology (TUT) and Tampere University of Applied Sciences (TAMK). It starts with the steps followed to select the sample group and to prepare the questions. It finishes showing the results and using charts to make the interpretation easier for the reader.

## Chapter 9. Conclusions

This point exposes the different conclusions achieved through the work. It includes also some ideas to continue improving the research of this topic.

## **2. Brief Analysis of Crisis Environment**

It is always important to know where we are, what is around us, and how it can affect us, especially when the situation is like the present one, with an uncertain economic future and several doubts about what to do even in a short term period. This is the reason why it is necessary to start with the description of the environment.

### **2.1. The economic crisis**

Due to the economic crisis started in 2008 and the repercussion of it, the economic point is considered the most important one in the actual moment, therefore this work will mainly focus on it and it will check how the economic factor affects the others.

#### **2.1.1. How does the Economic factor affect Politics?**

As the European Union reflects in its periodically statistical publication from Eurostat, after a period of several years of economic growth and job creation, nowadays the situation in the zone is the biggest economic downturn since World War II (Eurostat 2010).

The most common measure of the economic activity is the Gross Domestic Product (GDP). The GDP is defined by Eurostat as the value of all goods and services produced, less the value of any goods or services used in their creation. The calculation of the annual growth rate of GDP volume is intended to allow comparisons of the dynamics of economic development both over time and between economies of different sizes. (Eurostat 2010) Looking at that factor we can see the evolution of the last years the acute crisis suffered in 2009. Since that moment, the economies of many countries have been trying to grow up again with different results.

As we can see in Figure 1, the situation in countries such as Portugal or Greece is still quite risky (we cannot forget the different economic rescues that both countries got from the rest of the European Union). In addition, the actual global market makes the bankrupt in one of these countries affect the others due to a domino effect.

### Real GDP Growth Rate

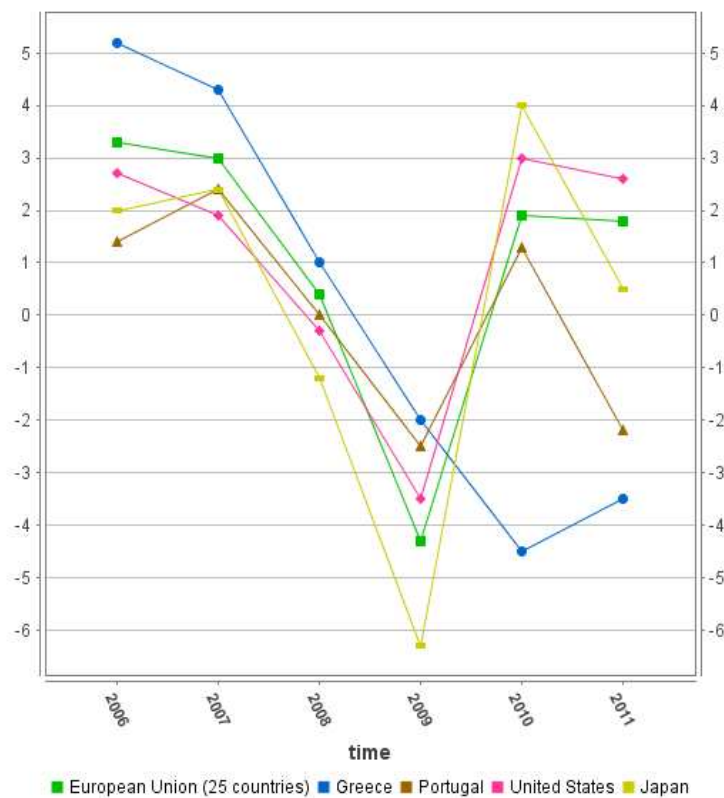


Figure2. GDP growth rate of EU, Greece, Portugal, US and Japan. Source: Eurostat (2011).

Even for those zones with better results, as the average of the Euro Zone, there are other factors that do not allow them to feel safe; it is only necessary to check the evolution of the debt or the deficit of this zone on the following graphs from European Central Bank.



Figure3. Government debt as percentage of GDP. Source: European Central Bank (2011).

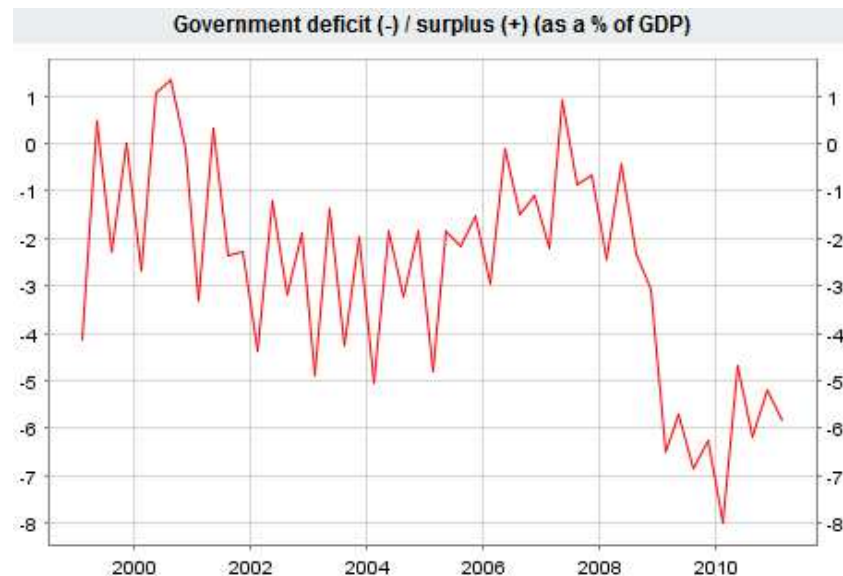


Figure4. Government deficit/surplus as percentage of GDP. Source: European Central Bank (2011).

After watching all these data and graphs, in the last years the different governments try to solve this crisis period by implementing changes in their policies. For example, they are taking special care in the regulation and supervision of the financial sector. Novales explains that one of the factors that made this crisis the actual problem that we have was the laxity of regulation of markets by the governments, trusting in the auto-regulation of them. As he explains, this factor was not responsible of the crisis, but did not help to stop it. (Novales 2010)

Another reaction for the countries with higher debts was to increase taxes to obtain money to pay the high interests of new loans. This method can be considered counterproductive because it may reduce the population's consumption but it was the only option left for countries such as Greece or Portugal. In August, Portugal was trying to increase the Value Added Tax (VAT) for gas and electricity since October from 6% to 23% (Dujisin 2011).

These governments are trying to reduce expenses too, in words of the prime minister of Portugal: "We will get our budget balanced by two-thirds of the expenditure side, and only one third of the revenue side." (Relea 2011)

It also affects fields like the humanitarian sector. In Spain, the budget for the Official Development Assistance (ODA) was reduced in 900M € for 2011 (Coordinadora ONG para el desarrollo 2010).

Intermon Oxfam calculated this reduction and it was around 23% less than the budget that the Spanish government planned for 2009 (Gutiérrez 2011).

### 2.1.2. How does the Economic factor affect Society?

This economic environment does not affect just governments; most companies had to change their strategies with the new situation. The companies less prepared and with higher debts disappeared; for example, the “Confederación Española de Pequeña y Mediana Empresa” (CEPYME 2009) published a reduction of almost 74,000 and 67,000 companies in 2008 and 2009 in Spain. Even some companies, which did not disappear, established collective dismissal procedures (like the case of the automobile manufacturer “SEAT” from Volkswagen group, in Spain, with 4,700 employees affected (El mundo 2008)).

The result of this situation is a high level of unemployment. Looking at the data from Spain:

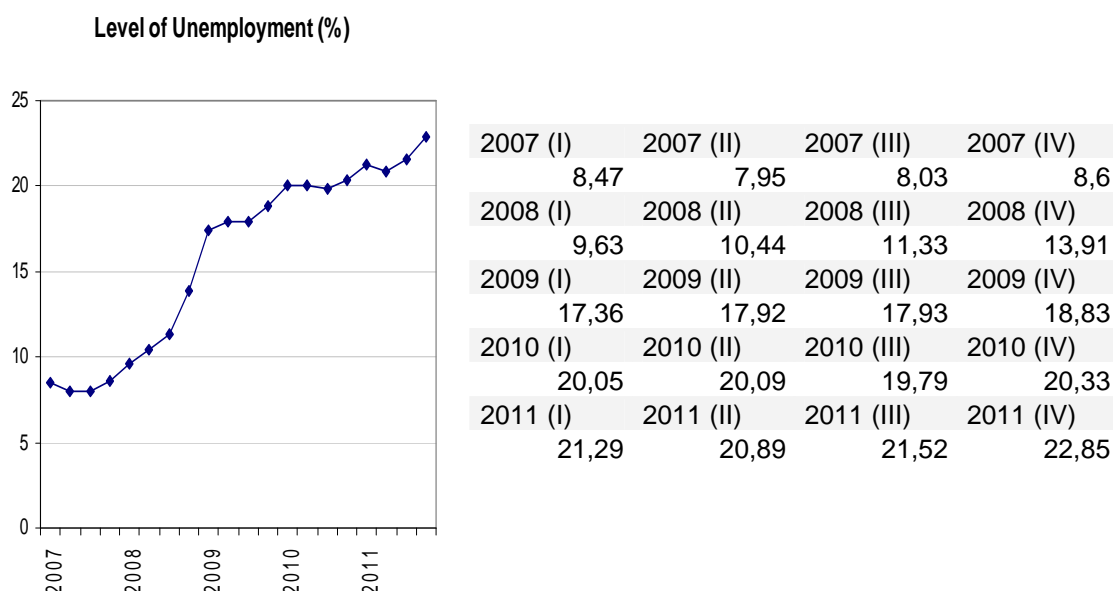


Figure 5 and Table 1. Level of unemployment (%) in Spain calculated quarterly. Source: Data from Instituto Nacional de Estadística (2012) and own elaboration.

In this uncertain moment, when the labour market is so unstable, the families start to reduce their budgets and think more about how much they are paying and for what. The consuming behaviour decreases and the actual priority for the consumers is to save money. This is a problem for the whole system because Capitalism depends on consuming, as it reflects the Saving Paradox (popularized by Keynes): “Household savings are good for the household at most times but bad for an overall economy most of the time” (E. Canterbury, 2006). If everyone tries to save more money during times of recession, then aggregate demand will fall down and it means lower total savings in the population because of the decrease in consumption and economic growth.

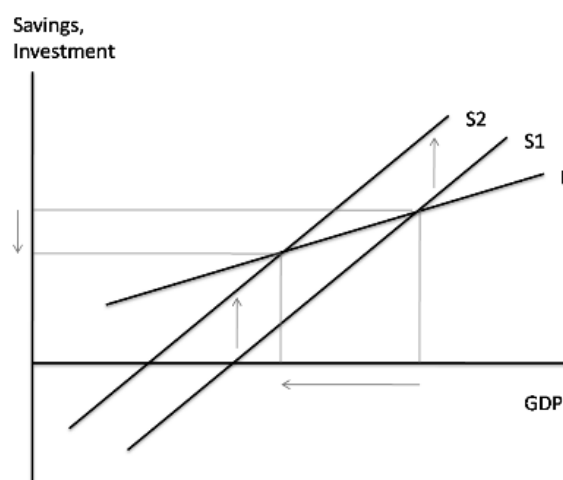


Figure 6. Explanation of “paradox of thrift” where “S1” and “S2” represent the level of saving and “I” is the investment. Source: Krugman (2009)

We can consider that Keynes’ ideas are a bit old, but some of them continue being useful, as Krugman (2009) explains about this topic: “We won’t always face the paradox of thrift. But right now it’s very, very real.”

### 2.1.3. How does the Economic factor affect Technology?

With surplus, the companies have enough money to expend in the development of new processes and technology, usually a really expensive cost with uncertain results. When the period is economically worse, these investments in innovation tend to be stopped in order to save money and support the maintenance of other expenses.

The article “R&D and the economic crisis: Top EU firms cut investment less than US rivals, but Europe still well behind”, analyzes the situation of the investment in R&D that the European Commission showed in its document “EU Industrial R&D Investment Scoreboard” of 2010 (European Commission 2010). The article focuses on how R&D investments made by top EU companies fell by 2.6% in 2009. The fall in R&D investment by leading players in the US was 5.1%, and the worldwide reduction was lower, at 1.9%. Japanese firms maintained their level of investment and companies based elsewhere in Asia - China, India, Hong Kong, South Korea and Taiwan - continued the high R&D growth seen in previous years. (European Commission 2010) From this data, we can conclude that the R&D investments are maintained just in the places where the recession was less critical or even where there was not recession. Figure 7 reflects this situation.

### R&D Investment

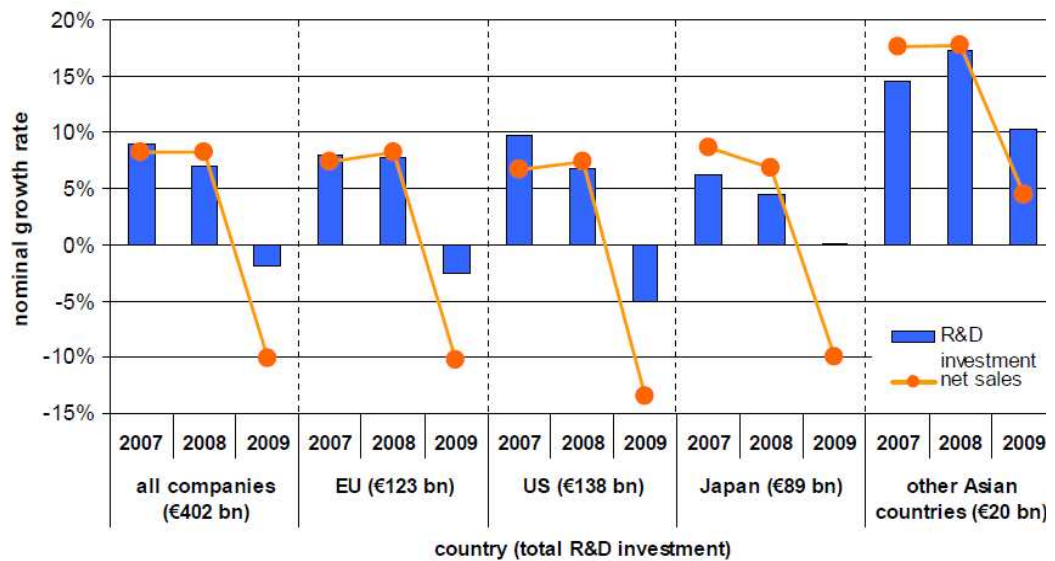


Figure 7. Growth of R&D investment in the Scoreboard and GDP growth. Source: European Commission (2010)

Reading “The 2010 EU Industrial R&D Investment Scoreboard” it is significant the reduction in sectors as the automobile (11.6%) and the technologic hardware and equipment (6.4%). On the contrary, the sector of alternative energy increased its investments in R&D by 28.7%. (European Commission 2010)

### R&D Investment (2007)

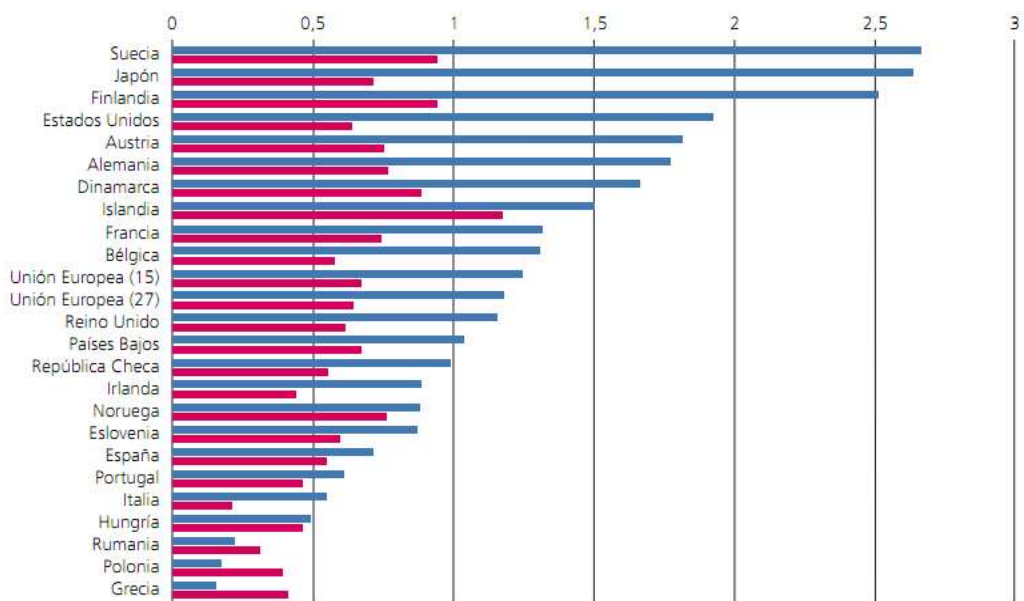


Figure 8. Level of expenses in R&D respect the GDP during 2007. The blue bars represent the expenses from companies and the red ones from universities and public institutions. Source: Fernández de Lucio (2007)

The R&D, as it has been shown before, is directly affected by the economic situation, but it is also one of the factors used to develop and achieve the goal of overcoming the crisis and even to prevent future ones. Looking at Figure 8, we can see how the countries with less R&D investments in 2007 are also in the higher risk levels during the actual economic period as it is the case of Greece, Italy, Portugal, or Spain.

The crisis stops the development of new technologies (at least those ones in need of a big economical investment) and with them the development of the industry and the countries. There is a Spanish say: “Money attracts money” (el dinero llama al dinero) when there is money, making more is easier than when there is not, and the actual situation corresponds to the second one.

## 2.2. What can the companies do?

But, does this mean that in the actual situation companies cannot do anything? Should they just wait until a better period? The answer is no. It is now when companies have to focus more in these consumers (their consumers) and give them what they expect because it is the only way to maintain their confidence and level of sales. Nowadays the old idea of producing just for specifications seems far away. As Gale (1994) explains, customers choose one product or service over another when they believe they will get better value than they could expect from the alternative.

It is easy to think that the first quality of a product or service is to achieve the specifications required but, after that, it has to be different (better) than the others to obtain the added value for the customer. Porter (1998) already enunciated three generic strategies that still being used nowadays: cost leadership, differentiation and focus.

The price could be considered the most important factor in an economic crisis period, but it is not the only one. As happens with the human motivations explained by Maslow with his “pyramid” and analyzed by King (2009), the specifications and price of the product or service could be in the base of the purchase decision, but when these factors are covered appear other factors related with the psychology of the person that get more importance.

The pyramid cannot be watched as a global certain, as Dowty (2011) says, “the hierarchy of needs collapses when one person’s basics needs become another person’s derived needs and vice versa”. One example, related with the humanitarian sector, could be a victim who refuses the food offered if it is prohibited by its religion even in a critical situation. In commercial sector, for instance, the preference of some consumers to pay more for something that could be cheaper but with less moral content for them.

For illustrate this idea, in Figure 9 and Figure 10 the pyramid appears deliberately distorted in order to show how the levels, even been a good reference, cannot be taken



as fixed and all of them can affect the others. This idea is required to understand the decisions of the people, also as consumers.

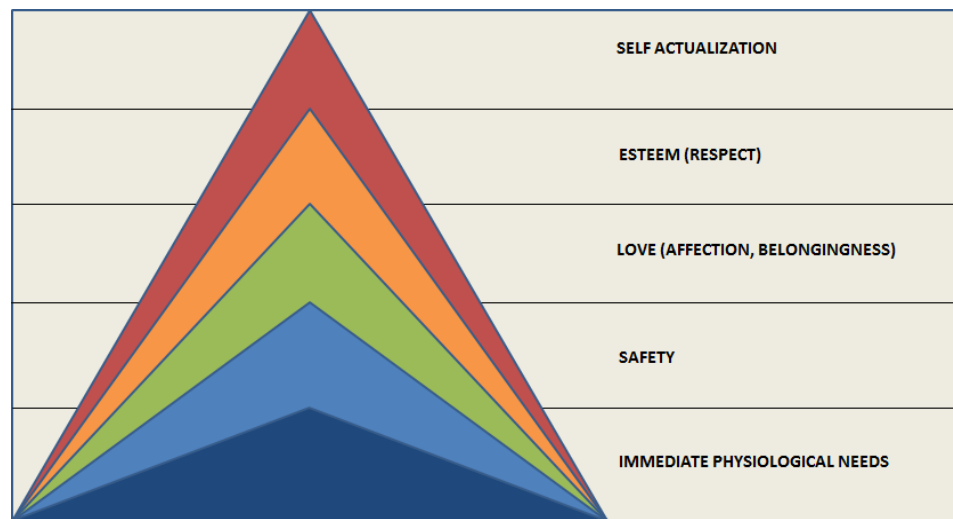


Figure 9. Adapted from Maslow's Pyramid. Source: Own elaboration.

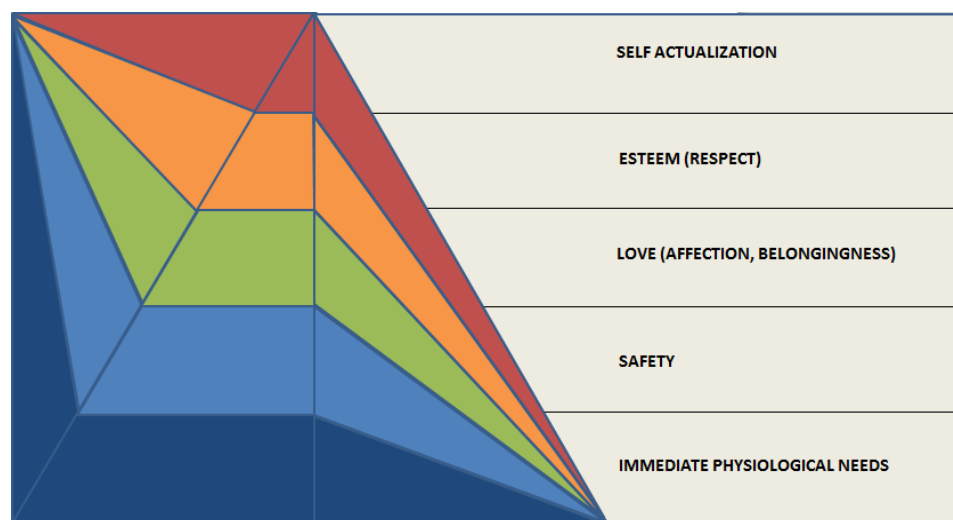


Figure 10. Adapted from Maslow's Pyramid. Source: Own elaboration.

Figure 9 reflects the influence of higher levels in lower ones. One example could be the consumer of “fair trade”, who prefers pay more but feel better because it is supporting the sustainability of less developed regions. He or she could cover its physiological needs buying cheaper food than from a fair trade shop, but the higher levels of the pyramid have influenced its decision.

Figure 10 adds another point of view, the possibility that lower levels of the pyramid could also affect the higher ones. For instance, some people, when they do not feel a high self esteem try to cover these needs with the previous levels like trying to have more healthy life (something that can be considered a physiological need).

It is at this point when the Corporate Social Responsibility (CSR) appears. The idea is to see the company as part of an environment and introduce the challenge of sustainability to develop this environment or, at least, not to make it worst. People take care of these responsibilities and, with their purchase decisions, they can choose to punish or reward a company that “thinks” like them and shares their same goals.

Non-governmental organizations (NGOs) are a clear example of that. In Spain, the number of people affiliated to NGOs increased in 2009. Especially interesting is the case of Spanish Red Cross, which had a rise up of more than 150,000 people, from 754,310 in 2007 to 909,126 in 2009 (Eroski 2011).

In a more international context, a good example is the case of millennium objectives of United Nations (UN). As it is published in its report of 2010, in 2009, net disbursements of official development assistance (ODA) amounted to \$119.6 billion, or 0.31 per cent of the combined national income of developed countries. In real terms, this is a slight increase (of 0.7 per cent) compared to 2008 even though, measured in current US dollars, ODA fell by over 2 per cent—from \$122.3 billion in 2008. (United Nations 2010)

After looking at the inconveniences of the actual period, and knowing that it is necessary to improve the offer to the consumers, the question is where exactly should we focus our efforts? Focusing on the supply chain can allow the company to develop its skills in a hard global market with competitors, with a sort life span of products, a lot of new technologies for information and communication, and also with new transportation strategies. Minimizing the costs to offer better prices and maximizing the customer service, will give the company the advantage needed for the new times. (Simchi-Levi et al. 2004)

It is not the first time that the industry focuses its efforts in the sector of logistics. Moore and Taylor (2011) cite some examples of previous successful logistics improvements, like the “centralized and contracted-out distribution” of companies as Wal-Mart and Carrefour during 80s or the “lean policies” adopted during 90s by the Japanese car-makers. But this sector still has a high potential of development.

With this work, it will be shown one example to illustrate how this can be possible by mixing the ideas of the commercial supply chain and the humanitarian logistics. Both have their own strengths and also weaknesses. Obtaining the best point of each one can produce the advantage that any organization needs.

### 3. Characteristics of Commercial and Humanitarian SC

There are a lot of terms, and definitions related to supply chain. For Lee and Billington (2005), cited by Sabbaghi and Vaidyanathan (2007), a supply chain is a network of facilities that performs the functions of procurement of material, transformation of material to intermediate and finished products, and distribution of finished products to customers.

The Council of Supply Chain Management Professionals (the preeminent worldwide professional association of supply chain management, as it defines itself) also defines some basic concepts in its glossary.

**Logistics:** The process of planning, implementing, and controlling procedures for the efficient and effective transportation and storage of goods including services, and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements. This definition includes inbound, outbound, internal, and external movements. (The same definition is given by the Institute for Supply Management). (CSCMP 2011; ISM 2011)

**Supply Chain (SC):** 1) Starting with unprocessed raw materials and ending with the final customer using the finished goods, the supply chain links many companies together. 2) The material and informational interchanges in the logistical process stretching from acquisition of raw materials to delivery of finished products to the end user. All vendors, service providers and customers are links in the supply chain. (CSCMP 2011)

Nowadays the common idea, as Moore and Taylor (2011) explain, is that for optimal effectiveness, processes and activities from the point of origin through to the end-users had to be taken into account. These are the basis for an integrated approach to supply chain. Also the CSCMP keep that in mind and defines logistics management and supply chain management as:

**Logistics Management:** It is that part of supply chain management that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services, and related information between the point of origin and the point of consumption in order to meet customers' requirements. It means that the logistics management is an integrating function which coordinates and optimizes all logistics activities, as well as integrates logistics activities with other functions, including marketing, sales, manufacturing, finance, and information technology. (CSCMP 2011)

Supply Chain Management (SCM): Encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. In essence, supply chain management integrates supply and demand management within and across companies. (CSCMP 2011)

Other definitions exist which have a similar significance, for example the Institute for Supply Management defines the Supply Management as "The identification, acquisition, access, positioning, management of resources and related capabilities the organization needs or potentially needs in the attainment of its strategic objectives." (ISM 2011)

After reading these definitions we can conclude, as already made it Farley (1997), cited by Wang et al. (2007), that the SCM is not only concerned with the extraction of raw materials to their end of useful life, it also focuses on how firms utilize their suppliers' processes, technology, and capability to enhance sustainable competitive advantage. Without forget that each day the chain involves more actors and the network becomes more complex.

Wang et al. (2007) also cite Cooper et al. (1997), who wrote that when all organizational entities along the supply chain act coherently, operation effectiveness is achieved throughout the systems of suppliers. But what does the term "coherently" means? It can be thought that the meaning of this word is the searching of the own benefits and, following this idea, Adam Smith, in the 18<sup>th</sup> century already said that the markets could achieve the effectiveness just depending on how the people try to do the best for themselves (Smith and Butter-Bowdon 2010). However, examples like the "prisoner dilemma" show that the best option for one of the parts implicated could be not the best option for the global system (Carmichael 2005).

Flynn et al. (2010) explain that manage the supply chain by segments or subsystems can produce a local optimization but is not usual to obtain a global one. They affirm that SCM allows the achievement of global optimization due to the management of the whole supply chain as a single entity. (Flynn et al. 2010) However the complex networks, the different objectives along the chain and the dynamism of the system are some of the barriers for achieve this challenge.

Sabbaghi and Vaidyanathan (2007) cite Bozarth and Handfield (2005) showing the generic performance factors relevant to the supply chain management. According to them, the four factors are:

Quality: Taking into account the basic operation characteristics of the product or service, if it satisfies the specifications and if could be any fail or problems during its service time.

**Time:** It refers to the agility of the chain, how fast can the companies or organizations response to any demand and also the capacity to do it exactly when it was fixed.

**Flexibility:** Related with the variety and quantity of products or services and the ability to perform them on time.

**Cost:** Direct and indirect costs, labour costs, material costs, delivery costs, etc.

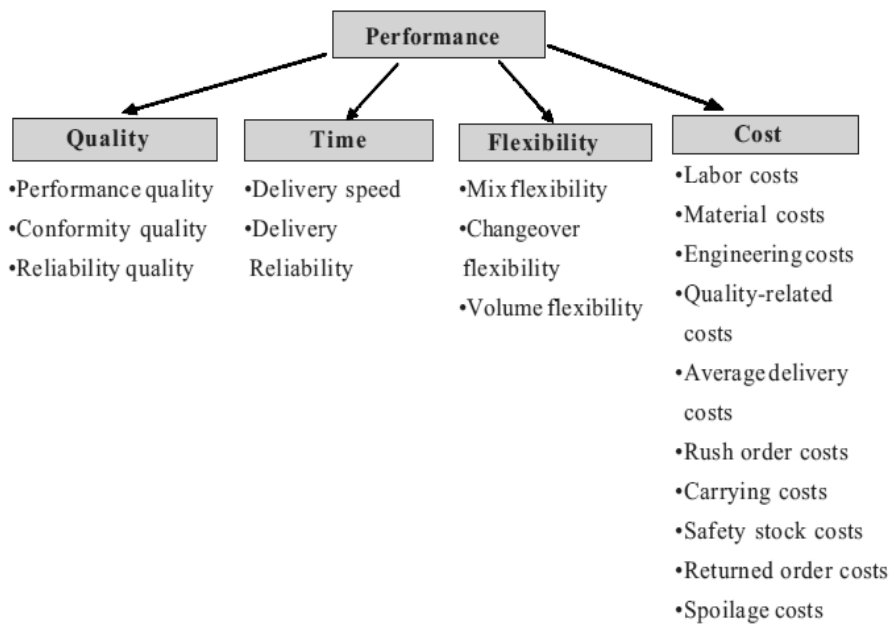


Figure 11. Supply Chain Performance Factors. Source: Sabbaghi and Vaidyanathan (2005)

These Factors have to be measured to allow companies understand them, study them, and use them to control and improve them. As Tatham and Huges (2011) explain, the performance measurement is one of the core elements of managerial activity and the choice of a “Performance Measurement System” is central to achieve the targets fixed by the company in its strategic plans. What it is also necessary is to choose the good indicators, the ones that can mean a real reference of the activities, to obtain significant results (something easier in the commercial sector, where the economic results lead the others, than in the humanitarian one).

The concepts exposed until now are common for both sectors, the commercial and the humanitarian one. However nowadays continues being a lot of literature focused on the commercial sector and it starts to appear also studies focused on the humanitarian world. For this reason, it is possible to define more concretely the special situation of each one separately and make a more deeply study about their unique characteristics.

### 3.1. Commercial Supply Chain

#### 3.1.1. Relevance of SCM

Hsu and Shih (2007) cite Hill and Scudder (2002) when they explain that the SCM, characterized by inter-organizational coordination, deals with how each company in a supply chain coordinates and cooperates with its business partners. Along the supply chain, most business activities are integrated for effectively supplying products and services to customers via a continuous, seamless flow (Hsu and Shih 2007). Hsu and Shih (2007) also keep in mind the ideas of M. Porter (1985) when they say that the concepts of value chain and value system are in the base of the SCM viewpoint of “process”. Finally, according with Williamson et al. (2004), Hsu and Shih (2007) add that in a value system, simply a series of integrated processes is insufficient to support a supply chain and offer fully synchronized operations of all supply chain partners.

Like Moore and Taylor (2011) remark, through the application of SCM, commercial organizations have reduced their cost base and have been able to compete in global marketplace. To add some data to this affirmation, Smith et al. (2007) citing Ferguson (2000), explain that the SCM should be implemented because of its powerful impact on short- and long-term goals in profits, market share, and customer satisfaction. To put the advantages in numeric terms, Smith et al. (2007) remark that companies that have successfully implemented SCM have observed order-cycle times and inventory days of supply that are about 45% lower than their competitors. Further, these companies have been observed to be able to meet their promised delivery dates 17% faster than their competition. (Smith et al. 2007)

Smith et al. (2007) citing Elmuti (2002), reflect a survey conducted by Deloitte Consulting which reports that while 91% of manufacturers in North America rate SCM as being very important or critical to the success of their company, only 2% of these manufacturers rank their supply chain as world-class. Supporting this, the Bourton Group (quoted by O’Connell 1999) revealed that in excess of 80% of manufacturing companies made the more effective management of their supply chains a number one priority (see Smith et al. 2007).

Simchi-Levi et al. (2004) identified 9 key factors for SCM: (1) Networking planning, (2) inventory control (with special attention to the uncertainty), (3) supply contracts (looking for a global optimization instead of just the own profits of each party in the chain), (4) distribution strategies, (5) supply chain integration and strategic partnering (information sharing, operational planning...), (6) outsourcing and procurement strategies (identifying the core competences), (7) product design (a bad design can increase the inventory holding or transportation costs, however, a good one can facilitate shorter manufacturing lead time), (8) customer value (sometimes measured just by the quality but it is related with the entire range of products, services and

intangibles that constitute the offer from the company to the customer), and (9) information technologies (critical enabler of the effective SCM).

### 3.1.2. Most important Flows in CSC and how they are Measured

In the commercial sector, as it was shown with the definitions, the Supply Chain and SCM take in account the flows of goods and services, and information. Tomasini and Van Wassenhove (2009) refer to it as the Three Bs: Boxes, Bytes, and Bucks, where the third “B” is referred to the financial flow that also exists in the supply chains.

- Boxes (referred to material): This represents the physical product flow from suppliers to customers as well as the reverse flow for product returns, servicing, and recycling.
- Bytes (referred to information): This represents the order transmission and order tracking which coordinates the physical flows.
- Bucks (referred to financial flow): This represents the credit terms, payment schedules, and consignment arrangements.

There are many reasons to develop proper measurements of these flows. Rushton et al. (2006) give five key reasons for implement a good monitoring system for supply chain:

1. To enable the achievement of current and future business objectives (linked to associated logistics and distribution objectives).
2. To facilitate the effective provision of logistics services, this enabling checks to be made that the distribution operation is appropriate for the overall objectives.
3. To enable the efficient operation of logistics resources, to ensure the optimum for the distribution operation.
4. To support the planning and control of an operation, so that any information can be feedback to the process of planning and management.
5. To provide measures that focus on the real outputs of the business. This enables action to be taken when the operations are not performing satisfactorily or when can be identified potential improvement to the operation.

Rushton et al. (2006) also explain that there are several systematic approaches that have been developed and define some of them, as the Balanced Scorecard or the Supply Chain Operations Reference (SCOR) model.

The Balanced Scorecard, as they explain, was initially put forward by Kaplan and Norton (1996). This is a broad business approach that translates the strategic mission of a business operation into tangible objectives and measures. (See Rushton et al. 2006)

Key Performance Indicators (KPI) are developed to represent a balance between (1) external measures for shareholders (financial perspective) and customers (customer perspective) and (2) internal measures of critical business processes (internal processes perspective), innovation and learning (innovation and learning perspective). The different measurements, catalogued as “typical” by Rushton et al. (2006), and ordered by scorecard, are:

Financial perspective: Sales growth (%), Market share, Investments (% of sales), Revenue per employee, ROCE.

Customer perspective: Customer acquisition, Customer retention, Customer satisfaction, Perfect order.

Internal process perspective: On-time delivery, Quality improvement, Stock turn, Order-picking accuracy.

Innovation and learning perspective: Employee retention, Employee satisfaction, Employee productivity, New product introduction, Training achievement.

Cousins et al. (2008) propose a fifth perspective to complete this approach by taking in account the supplier performance.

Other of the approaches defined by Rushton et al. (2006) is the SCOR model, an important approach that has been developed as an aid to cost and performance monitoring.

As these authors explain, SCOR model is a hierarchical model consisting of four different levels: (1) Competitive advantage, (2) Strategy implementation and process definition, (3) Detailed process elements and (4) Implementation. It is process oriented approach and the initial aim is to benchmark, refine and improve key operational processes and then to identify and introduce key measures that monitor set cost and performance targets. (Rushton et al. 2006)

The SCOR metrics are generally arranged under a number of categorizations, being the main ones: Assets, Cost, Data, Flexibility, Inventory, Orders, Productivity and Time. (Rushton et al. 2006)

The measurement tools cited are useful, as it was explained, for monitoring the process and activities of the company in order to control their efficacy and efficiency. However, to know if data collected from measurements are good or bad results, it is necessary a reference. This reference can be the goals of the company or the standards of the sector.

When properly and acceptable standards have been agreed for specific tasks, then a monitoring system can be adjusted to allow the measurement of real performance instead of expected or planned one. The major advantage of using engineered standards is that each task can be measured against an acceptable base. If the comparison is against the industry standards, the intention is to compare the company's performance



with similar external operations which gives more realism to the results and therefore an extra value to the measurement. (Rushton et al. 2006)

### 3.1.3. The importance of Quality Management for CSC: PDCA Cycle and Standards

Quality could be too subjective concept; for this reason, and with the aim of obtain equity in the criterion of measure quality, it was developed the standard ISO 9000. However, Lo and Yeung (2006) make the next affirmation: “ISO 9000 certification is not equal to excellent quality. The most important thing is how to improve quality continuously. ISO 9000 certification is only a subsidiary criterion in selecting a supplier”. In their article, they enunciate the critical factors in the Supply Quality Management (SQM) system and how they obtained that result. These factors (ordered in three fields) are exposed in Figure 12. (Lo and Yeung 2006)

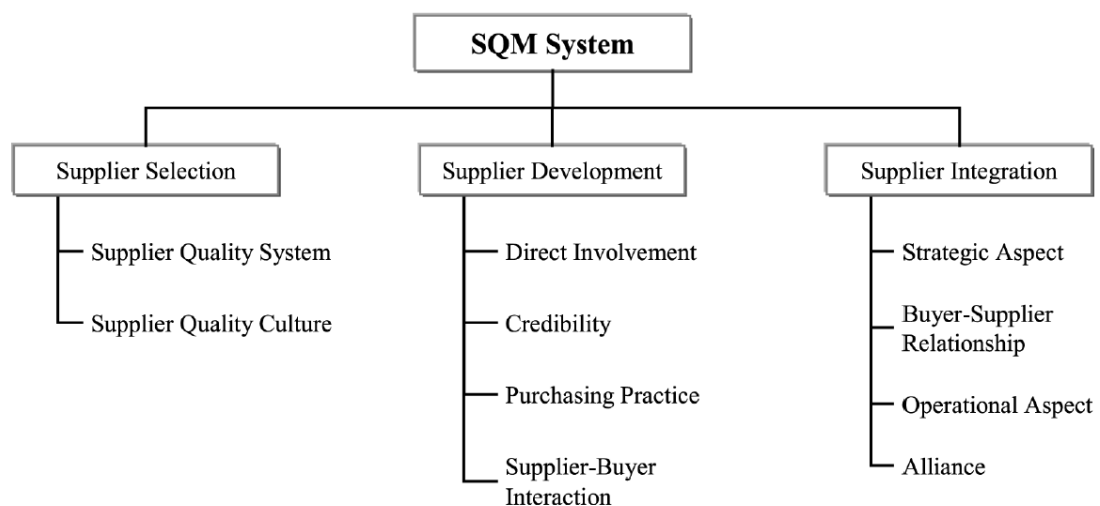


Figure 12. Critical factors in a SQM system. Source: Lo and Yeung (2006)

There are different methods to implement a continuous quality improve system within the company (and its supply chain). One of them is the PDCA cycle.

As Janakiraman and Gopal (2006) explain, the PDCA cycle was originally developed by Walter Shewart and popularized by Edward Deming (this is the reason why is also called “Deming cycle”). The cycle has four stages: Plan, Do, Check and Act (in this order).

In their book, Janakiraman and Gopal (2006) divide the four stages in 7 steps, more concrete and included into them:

#### Included in Plan Stage:

1. Select the theme or project. The problem exploration step usually produces several themes to work on. For continuous improvement, it is necessary to repeat problem-solving process. Examples of themes could be “decrease late delivery” or “reduce time spent with others than end user”.
2. Collect and analyze data. The goal of this step is to understand and highlight the problem studying the effects of the problem by reviewing the available data.
3. Analyze causes. The objective is to find out the root cause of the problem and to plan for corrective action.

#### Included in Do Stage:

4. Plan and implement solution. The target is to implement the plan and eliminate the root causes previously identified. The corrective actions have to be understood by all the affected people and for achieve it, the good communication and training will be necessary.

#### Included in Check Stage:

5. Evaluate effects. The effectiveness of the corrective actions is checked by comparing overall results, studying reasons for failure to meet the results and evaluating whether goal has been achieved.

#### Included in Act Stage:

6. Standardize solution. The objective is to ensure that the improved level of performance is maintained. The corrective action that has been successful in improving the performance must be documented in current operating procedures. Some processes of this step are standardizing and control or training to ensure that employees full understand the new methods.
7. Reflect on process and next problem. Here the main goal is to use the experience gained during the process for future projects.

Janakiraman and Gopal (2006) conclude with the positive improvements that the company can obtain from the implementation of the PDCA cycle because: it is a systematic problem-solving process that provides the quickest route to an effective solution, it ensures a detailed analysis of failure models, it requires detailed documentation of before-and-after failure data (useful for next improvements) and it ensures an agreed-upon schedule for project completion.

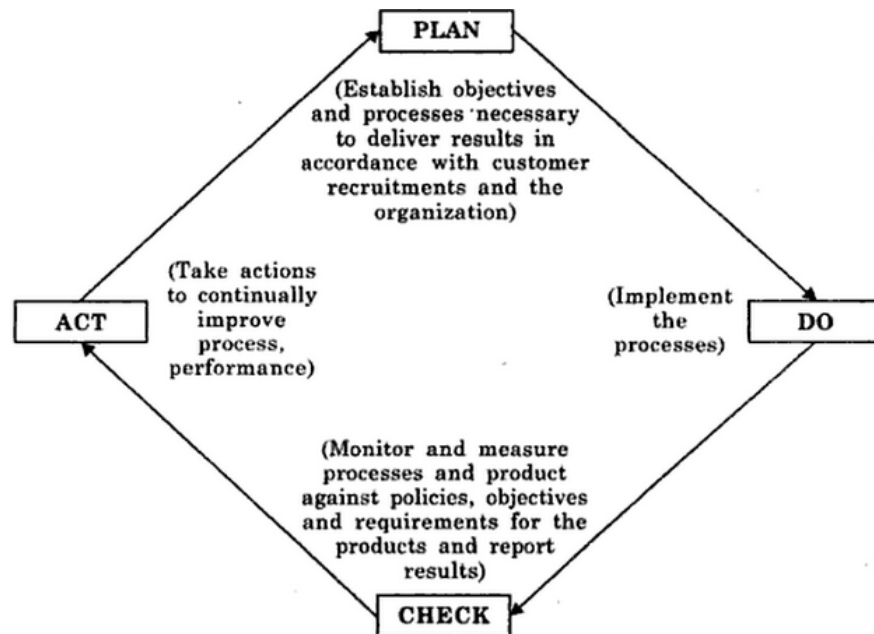


Figure 13. PDCA Cycle. Source: Janakiraman and Gopal (2006)

Finally, as Basu (2004) affirms, the PDCA cycle is more than just a tool; it is a concept of continuous improvement processes embedded in the organization's culture. For this author, the most important aspect of the PDCA lies in the third stage (the "Act") because after the completion of a project is when the cycle starts again for further improvements. (Basu 2004)

Even when Lo and Yeung (2006) affirmed that ISO9000 is just a subsidiary criterion in selecting a supplier, the data confirms the importance of this international standard. According with the data showed by Goetsch and Davis (2009), while in 2002 the number of registrations was 167.124 from 133 different countries, this number increased until 1.016.558 from 179 countries in 2008.

First of all, it is necessary to know that the International Organization for Standardization (ISO), responsible of the ISO 9000, is the world's largest developer and publisher of International Standards. ISO is a network of the national standards institutes of 162 countries. It is a non-governmental organization that forms a bridge between the public and private sectors. On the one hand, many of its member institutes are part of the governmental structure of their countries, or are mandated by their government. On the other hand, other members have their roots uniquely in the private sector, having been set up by national partnerships of industry associations. (ISO 2011)

ISO 9000 is a family of standards and guidelines related to the QMS. It sets the requirements for the assurance of quality and for management's involvement. (Goetsch and Davis 2009)

It is important to note that ISO 9000 does not specify a level of quality or performance for any product or service provided by an organization. That is left to the organization

to determine with its customers. ISO 9000 is about standardizing the approach that organizations everywhere use to manage and improve the processes that ultimately result in their products and services. (Goetsch and Davis 2009)

When an organization demonstrates conformity to ISO 9000 to an independent registrar firm, the registrar firm can certify the organization. Registration provides the assurance to customers worldwide that products or services from the organizations can be expected to consistently meet customer requirements.

The standard counts with 8 principles: (ISO 2011)

1. Customer focus
2. Leadership (establish unity of purpose and organizational direction)
3. Involvement of people
4. Process approach
5. System approach to management
6. Continual improvement
7. Factual approach to decision making
8. Mutually beneficial supplier relationships

It is true that the relevance of this standard in Asia and Europe seems higher than in the USA because this last country was situated in the sixth position with 49.820 registrations while China and Japan were the first and third one with 180.107 and 89.375 respectively in 2008; Italy and Spain were the second and fourth one with 117.437 and 63.883 respectively at that moment. (Goetsch and Davis 2009)

#### **3.1.4. Corporate Social Responsibility: the Ethic of CSC and its Standardization**

According with the idea of TwoTomorrows (an international corporate sustainability agency which deliver deep insight, strategic advice and pragmatic support to major companies, enabling them to create long-term value by doing business sustainably) Corporate Social Responsibility (CSR) is about how businesses align their values and behaviour with the expectations and needs of stakeholders - not just customers and investors, but also employees, suppliers, communities, regulators, special interest groups and society as a whole. CSR describes a company's commitment to be accountable to its stakeholders. (TwoTomorrows 2011)

CSR demands that businesses manage the economic, social and environmental impacts of their operations to maximize the benefits and minimize the downsides. For this agency, CSR is not only about fulfilling a duty to society; it should also bring competitive advantage through an effective CSR program. (TwoTomorrows 2011)

Citing Neef (2004), Valentino (2007) wrote in an article for China Sourcing News that today, "companies are increasingly turning to emerging social and environmental performance and process standards that provide a detailed and effective set of processes and policies by which companies monitor, adjust and report on corporate social and environmental activities throughout the supply chain".

Valentino (2007) explains that the corporation's ethics and risk management framework are at the heart of an ethical supply chain and CSR supports and facilitates this framework by implementing actions such as:

- Helping to establish a company's value statement and a comprehensive code of conduct that governs employee behaviour

- Developing internally an ongoing business case for action on social and environmental issues

- Generating measurable and verifiable indicators of performance

- Facilitating the adoption of internationally endorsed processes and performance standards

- Developing programs for building awareness and support both for company and supplier employees

- Providing and communicating thought leadership and coordination across all key functions of a company to support the creation and management of a comprehensive ethical supplier program.

Finally, it can be conclude that using CSR as a tool, modern corporations need to establish an ethical supply chain in order to reduce risk, protect reputation, live up to stated values, enhance the productivity of suppliers and reduce social and environmental impacts. Here is where CSR is playing a pivotal role. The reality facing companies is that lasting damage to a company's reputation, brand value, and its long-term profitability are at stake especially when a huge gap exists between the stated goals of a company and the reality that exists in their local and global supply chains. (Valentino 2007)

As an example of the importance that this issue has in the supply chain sector, it is showed the case of Mitsubishi Corporation (MC). Like its own web page explains, handling a diverse range of products and services across the globe, MC considers CSR as one of the important issues of supply chain management. In February 2008, MC formulated "CSR Guidelines for Supply Chain Management" as a policy for human rights, labour issues and environmental conservation that is followed by MC and also by its suppliers. (Mitsubishi 2011)

In order to communicate Mitsubishi Corporation's basic stance regarding supply chains, the company has established the following "CSR Action Guidelines for Supply Chains" which it expects all suppliers to embrace, understand and abide by:

1. Forced Labour: Suppliers shall employ all employees of their own free will with no employee being subject to forced or bonded labour.
2. Child Labour: Suppliers shall not employ people under the minimum legal working age of the country in question.
3. Safe and Healthy Working Environments: Suppliers shall work to provide employees with safe and healthy working environments.
4. Freedom of Association: Suppliers shall respect the right of employees to associate freely and for these groups to negotiate working environments, wages and other matters with employers.
5. Discrimination: Suppliers shall strive to ensure equal opportunities in the work place and shall not engage in discrimination with regard to recruitment and employment practices.
6. Abuse and Harassment: Suppliers shall respect employees' human rights and must not tolerate abuse or any form of harassment.
7. Working Hours: Suppliers shall ensure that employees' working hours and use of leave entitlements are appropriately monitored so as not to infringe upon any statutory regulations.
8. Suitable Remuneration: Suppliers shall pay employees at least the statutory minimum wage and shall not unreasonably reduce wages.
9. Consideration for Environmental Issues: Suppliers shall work to protect the environment and will consider the environmental impact of their business activities on local communities and ecosystems.
10. Information Disclosure: Suppliers shall disclose information with respect to the aforementioned matters in a timely and appropriate manner.

In its webpage, MC explains that conducts surveys of suppliers of a range of products, including those industries where CSR considerations are particularly impactful, such as agricultural produce and apparel. (Mitsubishi 2011)

It also exist an international standard with the aim of giving guidance on social responsibility designed by ISO called ISO 26000. According with the webpage of ISO, it is intended for use by organizations of all types, in both public and private sectors, in developed and developing countries, as well as in economies in transition. It will assist them in their efforts to operate in the socially responsible manner that society increasingly demands. ISO 26000 contains voluntary guidance, not requirements, and therefore is not for use as a certification standard like the ISO 9000. (ISO 2011)

The ISO 26000 project overview (2010) explains that the guidance in ISO 26000 draws on best practice developed by existing public and private sector SR initiatives. It is consistent with relevant declarations and conventions by the United Nations and its constituents, notably the International Labour Organization (ILO), with whom ISO has

established a Memorandum of Understanding (MoU) to ensure consistency with ILO labour standards. ISO has also signed MoUs with the United Nations Global Compact Office (UNGCO) and with the Organisation for Economic Co-operation and Development (OECD) to enhance their cooperation on the development of ISO 26000. (ISO 2011)

Really, there is other International Standard that can be considered part of the CSR of the companies because it is related with the environment, the ISO 14000. Companies have internal and external pressures for implement an environmental management plan. While the external reasons could be the industry requirements or the regulatory institutions; the internal pressures are related with idea of be “green” for the image of the company and the opinion of the own employees (it is necessary to keep in mind that the employee motivation continues being a key factor for the efficiency of the company). (Cousins et al. 2008)

In this case, the standard shows a list of requirements like can be the ISO 9000 and not just a guide for the companies. According to “Environmental management – The ISO 14000 family of International Standards”, ISO 14000 family of standards for environmental management was launched to provide a practical toolbox to assist in the implementation of actions supportive to sustainable development. It reflects international consensus on good environmental and business practice that can be applied by organizations all over the world in their specific context. (ISO 2011)

Successful steps have been taken to ensure compatibility of the ISO 14001 and ISO 9001 standards to facilitate their use by organizations that wish to implement both environmental and quality management systems. ISO 14001 has been adopted as a national standard by more than half of the 160 national members of ISO and its use is encouraged by governments around the world. Although certification of conformity to the standard is not a requirement of ISO 14001, at the end of 2007, at least 154 572 certificates had been issued in 148 countries and economies. (ISO 2011)

### **3.1.5. Information Technology applied to CSC**

As Hsu and Shih (2007) confirm, recently, it has been realized that the Information Technology (IT) plays an important role in supporting systematic integration and synchronization by providing automatic information flows throughout the entire supply chain. Also Rangaraj et al. (2009) affirm that IT offers interesting application for supply chain management that, used in a proper way, can be a unique tool for achieve a competitive advantage to the whole chain.

Ross (2010) affirms that “the implementation of IT has become an absolute requirement for success in today’s business environment”. The reasons that could explain this affirmation are: the necessity of fast services in increasingly complex

network, the demand of visibility by customers, and the implementation of this technologies by competitors. (Ross 2010)

Liao and Kuo (2006) explain that the goals of IT and information systems supporting supply chain affect different fields as: (see Khosrow-Pour 2006, pp.538-540) Cost minimization.

Increase levels of services.

Improve communication among the companies forming the supply chain.

Increase flexibility in terms of delivery and response time.

Simchi-Levi et al. (2004) enumerated the major issues in IT development related with the SCM that are helpful to achieve the goals previously cited. These issues are:

Standardization: IT standards are what allow systems to work together

Electronic commerce: one of the most important emerging IT field in the last years. It has enabled internal efficiencies and also collaboration with partners in the supply chain.

Supply chain system components: various systems involved in supply chain planning; typically combine short- and long-term decision-support systems (DSS) and intelligence elements.

Integration related issues: like order of priorities to achieve the goals discussed or the different investments required.

IT infrastructure: basic component of system capabilities.

This last issue was divided by the authors in: interface devices, communications, databases and system architecture (Simchi-Levi 2004). To give some example of real IT tools it is interesting to talk about the interface devices and the system architecture.

PCs, voice mail, internet devices or the bar code system are some of the most common interface devices used. An interesting recent development in this field is the Radio Frequency Identification technology (RFID) and the electronic product control (EPC).

The previous technology, the bar code it is considered one of the greatest innovations of the 20th century and represents the first large-scale, automated effort to identify objects. For retailers, the implementation of the bar code has led to improved pricing accuracy, greater labour efficiency, and reduced checkout time for customers. Product level data on time and place obtained from bar code systems greatly improved temporal and spatial utility within supply chains. During the 1980s, this was an important element in better management of inventory deployed at forward warehouses along with enhanced customer service. (Schuster et al. 2007)

Since bar codes are now a mature technology, it is natural to look forward to the next stage in the commercial use of identification systems. The EPC global Network is a system that builds on the tradition of automatic identification first established by the



bar code. At the core of this system is the Electronic Product Code (EPC), a serial numbering system designed to handle unique identification of trillions of objects. (Schuster et al. 2007) Like the barcode, the EPC is a series of numbers, but its capabilities are much greater. The EPC can be associated with specific product information, such as date of manufacture, origin and destination or shipment information. (Discover RFID 2011)

The meaning of creating such a network involves the placement of low cost Radio Frequency Identification (RFID) tags on objects such as cases, pallets, or individual products. In addition, RFID technology provides the capability for these tags to communicate with the Internet, secure Intranets, or point-to-point communication between organizations, through readers situated at various points within the supply chain. In the future, this type of network will form the base for “pervasive computing capabilities embedded in our everyday environments.” (Schuster et al. 2007)

Nowadays, most organisations are still experimenting with RFID as a means of managing goods internally. For instance airlines are tracking aircraft parts to document the components' maintenance history, thus ensuring safer air travel. (Discover RFID 2011)

Returning again to the main topic and talking now about the system architecture, the reference is the Enterprise Resource Planning (ERP) system.

From their origin, in material requirements planning, ERP systems have evolved into software packages that support coordination of different actors in a company. Current ERP systems contain modules not only for material management, but also for accounting, human resource management and all other functions that support business operations. In the past years, the role of ERP systems as coordination support has been extended to cross-organizational coordination. (Daneva and Wieringa 2005)

According with a report from Panorama Consulting shown by Limawan (2011), the leader of the market of ERP technology in 2010 was SAP with a market share of 24% followed by Oracle with a 18% and Microsoft Dynamics with a 11%. Within a market that, as James and Wolf (2000) reflect, during the 90's already received an investment from the enterprises valued in around 300\$ billion.

Berghout and Remenyi (2003) recognize the usefulness of ERP systems improving the efficiency of the company's activities; however they explain that these systems cannot solve the question “are we doing things effectively?” As Lu et al. (2007) explain there are other systems developed in order to improve this effectiveness focusing directly on the decisions adopted by the company like the DSS.

Decision Support Systems (DSS) are computer technology solutions that can be used to support complex decision making and problem solving. DSS have evolved from two main areas of research: the theoretical studies of organizational decision making and the technical work. (Shim et al. 2002)

Classic DSS tool design is comprised of components for (1) sophisticated database management capabilities with access to internal and external data, information, and knowledge, (2) powerful modeling functions accessed by a model management system, and (3) powerful yet simple user interface designs. (Shim et al. 2002)

Figure 14, also obtained from Shim et al. (2002), describes what probably came to be a more customarily used model of the decision-making process in a DSS environment. Here, the emphasis came to be on model development and problem analysis. Once the problem is recognized, it is defined in terms that facilitate the creation of models. Alternative solutions are created, and models are then developed to analyze the various alternatives. The choice is then made and implemented. (Shim et al. 2002)

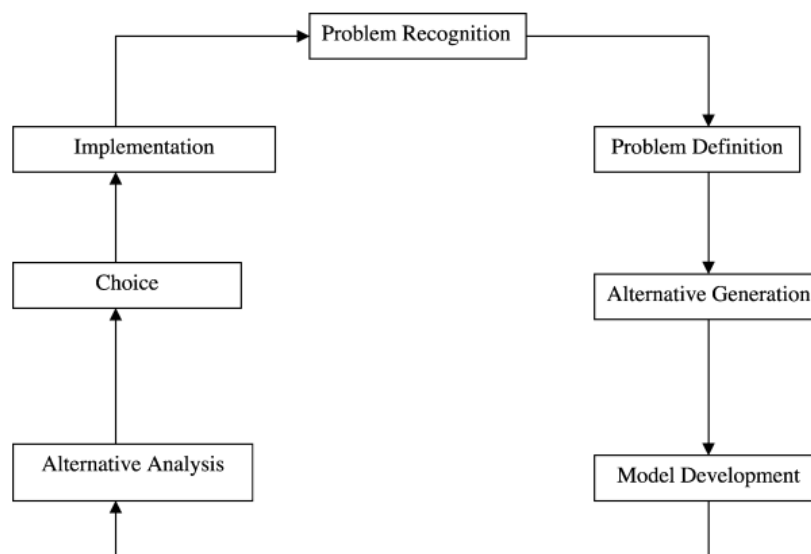


Figure 14. DSS decision-making process. Source: Shim et al. (2002)

The scope of DSS has been extended from personal or small group use to the corporate level. More recently management systems and knowledge-based decision support systems have used techniques from artificial intelligence and expert systems to provide smarter support for the decision-maker. The latter began evolving into the concept of organizational knowledge management about a decade ago, and is now beginning to mature. (Shim et al. 2002)

The role of technology as an enabler of SCM has facilitated the initial development of relationships between organizations; however, technology alone is not sufficient. Businesses are volatile and their operation is dependent upon a group of people cooperating along the chain. For them, it remains an open question about how supply chain managers might accommodate various stakeholder perspectives of supply chain problems: the cultural, social, and political forces at play; the diversity of individual skills and knowledge bases; and diverse individual value systems. (Smith et al. 2007)

### 3.2. Humanitarian Supply Chain

The humanitarian logistics has moved to humanitarian supply chain management as a normal development (like could be the case also in the commercial sector). This demands organizations to take more strategic dimension and associated view of suppliers and customers. (Kovács 2011)

In this case, the definitions of Humanitarian Logistics (HL) and Humanitarian Supply Chain Management (HSCM) have some particular characteristics if we compare them with the commercial ones.

For example, Buatsi (2011) cites Apte (2009) who defines HL as a special branch of logistics which manages response Supply Chain of critical supplies and services with challenges such as demand surges, uncertain supplies, critical time-windows in face of infrastructure vulnerabilities and vast scope and size of operations.

Wakolbawger and Toyasaki (2011) cite Thomas and Kopczak (2005) who define the HSCM like the “process of planning, implementing and controlling the efficient, cost-effective flow and storage of goods, materials and money, as well as related information from the point of origin to the point of consumption for the purpose of alleviating the suffering of vulnerable people”.

Tatham and Hughes (2011) reflect that nowadays there is a general acceptance about that logistics is the “cornerstone” of emergency response with some estimates suggesting that between 60% (if we follow the data showed by Blansjaar 2009) or 80% (looking at Van Wassenhove (2006) information) of the expenditure of aid agencies can be classified under the coverage of logistics. Both percentages are really high independently of the variations between them, and it means that a high amount of money is involved in this field. According to Christopher and Tatham (2011), we are talking about \$12-15 billion of \$20 billion that the sector can move every year.

NGO/agency	Annual budget (\$US billion)
UN Childrens' Fund (UNICEF)	3,390
World Food Programme (WFP)	5,000
UN High Commission for Refugees (UNHCR)	1,095
World Health Organisation (WHO)	4,225
UN Development Fund (UNDP)	5,000
UN Population Fund (UNPF)	250
(UN) Office for the Coordination of Humanitarian Affairs (OCHA)	240
World Vision International (VWI)	1,620
Save the Children	810
CARE	440
Catholic Relief Services	440
Médecins sans Frontières (MSF)	430
Oxfam	400
International Federation of Red Cross and Red Crescent Societies (IFRC) (not including income of National Societies, e.g. American Red Cross @>\$3billion/year)	500
<i>Total</i>	<i>23,840</i>

Table2. Annual budgets of major humanitarian agencies. Source: Tatham and Pettit (2011)

Because of its characteristics, as reflects Moore and Taylor (2011), the organizational environment of humanitarian aid is particularly challenging, with many players, a mix of complex cultures, political influences, differing interests, structures, systems, procedures and activities.

### 3.2.1. Disaster Management Cycle

The disaster management cycle is defined by Safran (2004) as “a dynamic process that encompasses the classical management functions of planning, organizing, staffing, leading, and controlling. It also involves many organizations that must work together to prevent, mitigate, prepare for, respond to, and recover from the effects of disaster”. (Safran 2004)

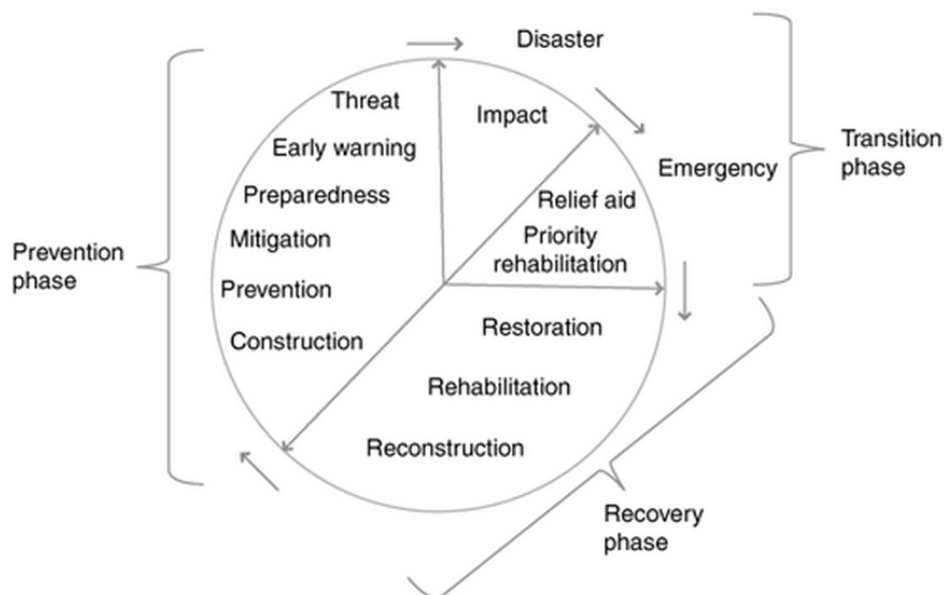


Figure 15. Disaster management cycle. Source: Safran (2004) adapted by Tatham and Houghton (2011)

The four phases that appears in Figure 15, explained by Safran (2004), are:

*Development or prevention phase:* the aim of this phase is to impede the reoccurrence of a disaster and/or to prevent its occurrence from act directly on communities or key installations. It needs to be included into a country's development process.

Some examples of activities at this phase could be: developing emergency strategies, establishing an emergency framework, creating information and early warning systems, equipping and training specialized personnel, promoting the funding of mechanisms for sustainable financing of disaster preparedness in

cooperation with the public, private, and civil-society sectors or the mitigation activities (like protect critical infrastructure, reinforce vulnerable structures, adjust buildings, control the use of the land, acquire hazard reduction technology or strengthening governance and social cohesion).

*Disaster:* In the wake of the disaster, immediate assistance must address the rehabilitation of high-priority physical and social infrastructure (water, sanitation, power, communications, and transport) without forget the main target of saving lives.

*Emergency response or transition phase:* The emergency response or transition phase immediately follows the disaster impact and applies to a fairly short period when emergency measures are needed to deal with the disaster's immediate effects.

After the emergency crisis is over, the efforts are focused to transitional social, institutional, and capacity requirements. These include the social and economic reintegration of displaced people, and the restoration of basic administrative and governance services. During the transition phase the main activities could be: provide seed and tools, short-term rehabilitation of social infrastructure, revitalize basic services and provide emergency medicines and immunizations or provide basic infrastructure, livelihood training, and employment schemes.

*Recovery:* Recovery is the process that allows the communities to return to their normal level of activities after a disaster. The recovery process can be extended a period between 5 or 10 years (or even longer time).

Immediate, short-term recovery will focus on transitional needs and the rehabilitation of critical infrastructure, like the case of power, transport or communications, as well as on project preparation and capacity building. In the medium to longer term, however, rehabilitation and reconstruction will be undertaken through normal development projects

Finally, Safran (2004) explains that this cycle is applicable to natural and non-natural (human made) disasters. “Thus, regardless of the type of emergency, they all necessitate speed, flexibility, and accountability, and also share the relative importance of risk and vulnerability assessment, early warning, mitigation, and preparedness.” (Safran 2004)

### **3.2.2. Most important Flows in HSC and how they are Measured**

As happens with the case of commercial supply chain, Tomasini and Van Wassenhove (2009) consider that the “three Bs” can be also applied for the humanitarian sector but now they add a fourth and fifth B for Bodies and Brains, representing people, and their knowledge and skills.

- **Bodies (referred to people):** This represents all the manpower deployed at each intervention to implement the supply chain.
- **Brains (Knowledge and Skills):** This is particularly acute in the humanitarian sector since each time a supply chain is deployed in response to a disaster the required skills need to be quickly reconfigured; that is, every supply chain is new and different

As Tomasini and Van Wassenhove (2009) explain, the key is to combine all five flows into a flawless execution plan to produce an adequate response.

The humanitarian organizations, like the commercial ones, try to be the most cost efficient possible in order to save money and use it for more projects, however, as Tomasini and Van Wassenhove (2009) explain, unlike commercial supply chains, humanitarian operations are not judged by their speed or costs, but rather by their impact. And this is not as easier for measure as the economic factors could be.

The Office for the Coordination of Humanitarian Affairs (OCHA) knows it and in 2005 affirmed that the establishment of appropriate mechanism to measure results on which a consensus can be built between humanitarian organizations, donors and recipient countries is notable for the absence of any mention of beneficiaries (Adinolfi et al. 2005). Tatham and Hughes (2011) remark the development of an appropriate suite of metrics for use in the field as one of the challenges of the sector; together with the ability of the fieldworkers to gather accurate information, while working under the extreme circumstances that can occur in the field. This point is important because if, as Adinolfi et al. (2005) and Tatham and Hughes (2011) suggest, there is a need to include appropriate metrics capturing the recipient's viewpoint, the measures will be taken in the field, something more complicated because of the characteristics of this environment.

The environment is not the only factor that makes more difficult the measurement of the operations, it is necessary to change also the concepts. As Tatham and Hughes (2011) explain, the vast majority of the metrics used to monitor the operations of the Supply network are financially based when recipients of aid cannot be seen in the same light as customers of a commercial supply chain, so there is a need to develop a suit of additional metrics to reflect the needs of the former and to measure not just the outcomes, but also the impact of all organizations that are responding to a disaster.

However the beneficiaries, even considering them as the most important stakeholders in the humanitarian chain, are not the only ones acting on it. The donors are who make possible that everything starts because they are who contribute with funds.

### **3.2.3. The importance of Funds for Non Profit Organizations**

Wakolbwger and Toyasaki (2011) explain that aid agencies need to compete for the resources that are available and, even when in recent years, contributions from foundations, individual donors and the private sector increased, as the amount of funds that the agency receives determines the scope of the relief operations it can conduct, the competition continues being high.

As it happens with the commercial companies, if funds are big, the agency can make economies of scale (reducing costs), more investments, have more flexibility and reduce the power of suppliers in negotiations (Wakolbwger and Toyasaki 2011). For this reason, the actual big agencies have an important advantage comparing with the medium and small ones. According to Feinstein International Famine Center (2004), cited by Altay and Labonte (2011), 75% of the humanitarian spending is handled by fewer than 15 large transnational organizations.

These big agencies also can achieve more visibility to donors; which usually means more donations because, as Tomasini and Van Wassenhove (2009) explain, private donations levels are strongly impacted by the amount and type of news coverage.

Some factors are key ones to determine how desirable the funds for the aid agencies are: volume, speed, fluctuation, predictability and flexibility of funds from different donors. As higher the volume, speed, predictability and flexibility and lower the fluctuation of the funds, as better for the organization which receive them. (Wakolbwger and Toyasaki 2011)

### **3.2.4. Standardization: the way to obtain Minimums of Quality in Humanitarian Projects**

Since donors cannot directly observe the quality of aid agencies' work, they need to rely on indicators of aid agencies' quality but, as it was shown earlier, the indicators usually used for measuring not always reflect the quality of organizations' work and as Wakolbwger and Toyasaki (2011) explain, better indicators are still largely missing [see point 3.2.3].

However, it exist different guidelines to guarantee the level of quality by codes of conduct. The problem is to find a common one to compare and also to fix a standard for minimums. The SPHERE project could be considered this document for common standards.

The Sphere Project is an initiative launched in 1997, by a group of humanitarian NGOs and the Red Cross and Red Crescent movement, to define and uphold the standards by which the global community responds to the plight of people affected by disasters, principally through a set of guidelines that are set out in the Humanitarian Charter and Minimum Standards in Disaster Response. (Sphere Project 2011)

Annex VI of Humanitarian Response Review, Adinolfi et al. (2005), reflects that, in 2005, 92.1% of the agencies asked had assumed the Sphere standards as owns.

ANSWER	#ANSWER	#TOTAL	PERCENTAGE (#ANSWER / #TOTAL)
Sphere Standards	35	38	92.1%
Code of Conduct (your own, or internationally recognized)	36	38	94.7%

Table 3. Results to question: Does your agency follow recognized guidelines and standards? Source: Costanza Adinolfi et al 2005.

The Sphere handbook 2004 was improved in 2011; the new one includes the characteristics of the cluster approach [see point 3.2.8] and it continues enunciating the humanitarian charter and core standards. Sphere handbook 2011 describes its different parts as follow: (Sphere Handbook 2011)

The Humanitarian Charter provides the ethical and legal backdrop to the Protection Principles and the Core Standards and minimum standards that follow in the Handbook.

The principles are reflected in international law, but derive their force ultimately from the fundamental moral principle of humanity: that all human beings are born free and equal in dignity and rights.

The Core Standards define the minimum level of response to be attained (as signaled by the key indicators) by humanitarian agencies, be they community-based, local, national or international.

There are 6 core standards: (Sphere Handbook 2011)

The first one recognizes that the participation of disaster-affected people and their capacity and strategies to survive with dignity are integral to humanitarian response.

The second Core Standard addresses the need for an effective response to be coordinated and implemented with other agencies and governmental authorities engaged in impartial humanitarian action.

Core Standard 3 describes the need for assessments systematically to understand the nature of the disaster, identify who has been affected and how, and assess people's vulnerability and capacities.



Agencies meeting Core Standard 4 design their response based on an impartial assessment of needs, addressing unmet needs in relation to the context and capacity of affected people and states to meet their own needs.

Core Standard 5 is attained by agencies that continually examine the effectiveness, quality and appropriateness of their response.

The sixth Core Standard recognizes that humanitarian agencies have an obligation to disaster-affected people to employ aid workers with the appropriate knowledge, skills, behaviour and attitudes to deliver an effective humanitarian response.

The Core Standards are promoting coherence and reinforcing a shared commitment to accountability (for example, the Humanitarian Accountability Partnership (HAP) 2010 Standard in Accountability and Quality Management). It has to be kept in mind that the Sphere Project is part of a group of quality and accountability initiatives within the sector, having a close working relationship with the Emergency Capacity Building (ECB) Project, which has developed the Good Enough Guide, and the Humanitarian Accountability Partnership (HAP). (Sphere Project 2011)

To know a bit more about other standards, and as it was already cited, we can explain the case of HAP. The HAP International, as it is explained in its publication “The 2010 HAP Standard in Accountability and Quality Management”, was established in 2003 to promote accountability to people affected by humanitarian crises and to acknowledge those organizations that meet the HAP Principles of Accountability. In order to provide an objective, consistent and logical approach to verifying that HAP members apply and meet the Principles of Accountability, HAP developed the 2007 Standard in Humanitarian Accountability and Quality Management. This was the first international standard designed to assess, improve and recognize the accountability and quality of humanitarian programs. (HAP International 2007)

The HAP Principles of Accountability cannot differ too much with the core standards of the Sphere Project, they are 7: (HAP International 2007)

1. Commitment to humanitarian standards and rights
2. Setting standards and building capacity
3. Communication
4. Participation in programs
5. Monitoring and reporting on compliance
6. Addressing complaints
7. Implementing Partners

For the purpose of the HAP Standard, accountability is the means through which power is used responsibly. Being accountable to crisis-affected people helps organizations to

develop quality programs that meet those people's needs, and reduces the possibility of mistakes, abuse and corruption. (HAP International 2007)

The HAP Standard Principles are: humanity, impartiality, neutrality, independence, participation and informed, duty of care, witness, offer redress, transparency and complementarity (HAP International 2007).

### 3.2.5. Humanitarian Families and their Principles

The standards are not the only principles of action of the humanitarian agencies. Tomasini and Van Wassenhove (2009) classified these organizations within three families: "faith-based" organizations, dunantist and wilsonians.

1. Faith-based organizations. Faith-based humanitarian organizations share many characteristics with their secular counterparts and are influenced by the same political, social and economic contexts. However, there are two characteristics which set faith-based humanitarian organizations apart from most secular humanitarian organizations: they are motivated by their faith and they have a constituency which is broader than humanitarian concerns. Examples of these organizations include Catholic Relief Services and Caritas. (Ferris 2005)

2. Dunantists. Tomasini and Van Wassenhove (2009) define them as those whose beliefs are rooted in the principles advocated by Henry Dunant, the man who launched the Red Cross Movement in 1875. The principles which give the basis for the Red Cross and Red Crescent movement still appearing at the end of their reports, for example in 2010 Annual Report of IFRC: (IFRC 2011)

*Humanity:* the International Red Cross and Red Crescent Movement, born of a desire to bring assistance without discrimination to the wounded on the battlefield, endeavors, in its international and national capacity, to prevent and alleviate human suffering wherever it may be found. Its purpose is to protect life and health and to ensure respect for the human being.

*Impartiality:* it makes no discrimination as to nationality, race, religious beliefs, class or political opinions. It endeavors to relieve the suffering of individuals, being guided solely by their needs, and to give priority to the most urgent cases of distress.

*Neutrality:* in order to continue to enjoy the confidence of all, the Movement may not take sides in hostilities or engage at any time in controversies of a political, racial, religious or ideological nature.

*Independence:* the Movement is independent. The National Societies, while auxiliaries in the humanitarian services of their governments and

subject to the laws of their respective countries, must always maintain their autonomy.

*Voluntary service*: it is a voluntary relief movement not prompted in any manner by desire for gain.

*Unity*: there can be only one Red Cross or Red Crescent society in any one country. It must be open to all. It must carry on its humanitarian work throughout its territory.

*Universality*: the International Red Cross and Red Crescent Movement, in which all societies have equal status and share equal responsibilities and duties in helping each other, is worldwide.

In addition to the Red Cross and Crescent Movement, the dunantist group also includes Oxfam, Save the Children, Médecins Sans Frontières (Doctors Without Borders) and others.

3. Wilsonians. The origin of this name is because they follow in the footsteps of President Woodrow Wilson's belief that it was possible and desirable to transform political, economic and cultural structures so that they liberated individuals and produced peace and progress, desire to attack the root causes that leave populations at risk. Although many of the most famous members of this camp originated in wartime and thus concentrated on rescuing populations at risk, they expanded into development and other activities designed to assist marginalized populations. Over time they also undertook advocacy (like a growing number of human rights organizations that also belong to this camp). Agencies involved in restoring and fostering economic livelihoods also express a Wilsonian orientation. Wilsonian organizations are certainly political, at least according to the Dunantist perspective; however even those who have subscribed to a transformational agenda present themselves as apolitical to the extent that they claim to act according to universal values and avoid partisan politics. Barnett (2010) One example of Wilsonian organization could be Cooperative for American Remittances to Europe (CARE) (Tomasini and Van Wassenhove 2009).

As Seipel (2011) explains, Dunantist (as well as the others) on one hand, assist the victims of disasters as effectively and efficiently as possible, and on the other follow their "rules of engagement" based on the principles of humanitarian assistance. However, Tomasini and Van Wassenhove (2009) add that Wilsonians and faith-based organizations could be said to have a built-in conflict of interest depending on how much their ideologies influence their agenda (political or religious).

### **3.2.6. 2004, the Inflection Point for HSC: Humanitarian Response Review and Cluster Approach**

All the recent literature about Supply Chain in the humanitarian sector has a common reference that is the tsunami of 2004 and its consequences. And this is because the tsunami represents the moment of the change. Van Wassenhove (2006) says, talking about this tsunami, that it provided the catalyst for the current sustained level of interest moving the logistics to the center stage.

In August 2005, therefore after the tsunami, the United Nations Emergency Relief Coordinator and Under-Secretary-General for Humanitarian Affairs commissioned an independent report for, as the own document explains, assess the humanitarian response capacities, map the gaps and make recommendations to address them. The objective is to develop a joint plan of action to improve the effectiveness and timeliness of the humanitarian response to emergencies. It was called Humanitarian Response Review (HRR). (Adinolfi et al. 2005)

Some important points extracted from the HRR “key findings” are the next ones: (Adinolfi et al. 2005)

The analysis reveals a number of well-known long-standing gaps that the system has failed to address in the past. Nevertheless, a positive element is that, both in the humanitarian organizations and in the donor community, there is a sense of urgency on the need to address those failures, thus opening a window of opportunity to move from the analysis of the problems to remedial actions.

Humanitarian organizations and donors acknowledge that the humanitarian response provided is not good enough and that remedial action is needed.

While individual initiatives are proceeding in the right direction, a global vision is lacking. Collaboration between the networks of the different organizations needs to be considerably improved.

The major gap identified is the low level of preparedness of the humanitarian organizations, in terms of human resources and industrial capacities. In the area of human resources, major shortcomings in managerial capacities are acknowledged. Recruitment policies, in particular during emergencies, fail to provide, in a timely fashion, the number and quality of required staff. Training within organizations, in general, is limited in scope and number of dedicated hours.

This document was already cited by several authors and the conclusions about the recommendations obtained from it were summed up by Altay and Labonte (2011) keeping special attention to the points of (1) create a new response strategy (with predictable funding and strengthening the humanitarian coordination system and the overall humanitarian response capacity), (2) consistent measurements standards for all

the humanitarian actors (taking care about the surge capacity via stockpiles), (3) engage in global mapping relief stocks and updated information (through human networks to Inter-Agency Standing Committee (IASC) and to Emergency Relief Coordinator (ERC)), and (4) awareness of the logistics planning and implementation benefits using the United Nations Joint Logistics Center (UNJLC) and Humanitarian Common Services (HCS).

In Annex XII of HRR, the donors asked by the study, show their opinion about the most important factors that can improve the global humanitarian system performance. The results reflect that 69.2% consider the strong coordination as a key factor for this (being this one the most common answer). (Adinolfi et al. 2005)

For Blansjaar and Van der Horwe (2011), the ability of local authorities and relief providers to restore order in the aftermath of a disaster is probably the most important current discussion topic in and about the aid sector. Actually, as Oloruntoba and Gray (2006) explain, logistics link nearly all stakeholders in humanitarian relief operations, including donor governments, intergovernmental organizations, NGOs (local and international ones), military, private sector and local communities. The network is complex and coordinate everything is not easy. Altay and Labonte (2011) add that, operationally, the constraints facing many of these actors are multiple and overlapping.

Blansjaar and Van der Horwe (2011) explain that 1200 NGOs (national and international) were part of the response to the 2004 tsunami and a similar number were registered with the UNOCHA in Haiti in the 3<sup>rd</sup> month after the earthquake. These high numbers also make the network more complex.

Altay and Labonte (2011) cite Kaatud et al. (2003) explaining that the need for an inter-agency coordination mechanism to deal specifically with logistics issues led to the creation of the UNJLC. According to the recommendations of Adinolfi et al. (2005), this interagency coordination was clearly strengthened by the cluster approach.

The cluster approach divides the humanitarian scene in 9 sectors or areas of activity, as it is showed in the Guidance Note on Using the Cluster Approach to Strengthen Humanitarian Response redacted by IASC, these clusters are: (Inter-Agency Standing Committee 2006)

Technical areas: nutrition, health, water/sanitation, and emergency shelter.

Cross-cutting areas: camp coordination/management, protection, and early recovery.

Common service areas: logistics and emergency telecommunications.

The Figure 16 is a cluster approach chart that appears in Annex VIII of HRR to add a graphical image to this approach. The chart also includes the objectives depending on the levels (global, regional, national or operational). (Adinolfi et al. 2005)

Petit et al. (2011) define the concepts of the cluster approach related to the logistics sector as:

Logistics cluster: group of humanitarian organizations and other stakeholders committed to commonly address logistics needs during humanitarian crisis (global and field)

Logistic cluster participants: individual organizations with recognized institutional logistics capacity that are involved in the logistics cluster approach and can provide dedicated staff.

Logistic cluster lead: organizations appointed by IASC to take the lead in the implementation of the logistic cluster, be accountable to the logistic cluster participants and the ERC or Humanitarian Coordinator (HC) and be the provider of last resort.

From the web of Logcluster (2011), it can be read “WFP is the logistics cluster lead at global level. Cluster leadership at field level is generally the same as at global level. However, in exceptional circumstances where WFP is unable to fulfil this role at field level, another field level cluster lead agency/organisation can be allocated the responsibility”.

Blansjaar and Van der Horwe (2011) add that while WFP has assumed the role of lead agency for logistics, UNOCHA keeps central registers of those organizations within the sector that are holding stores of key materials and equipment (this information is regularly published for general use). This allows a centralization of the information making easier the way to obtain it.

Altay and Labonte (2011) appoint that one of the problems of this approach is that some people inside the humanitarian sector think it is too controlled by the UN, for example the support received by the United States is lower than the one received by the European donors because of the skepticism of the US about the UN management. As Kovács (2011) says, “Everybody wants coordination, but nobody wants to be coordinated.” This idea appears also in the commercial sector, when the implementation of a new method makes some parts lose benefits, the responsible of those parts, due to its own goals, can disagree with the implementation of the new method even when this implementation can achieve a global optimum for the whole process.

According to the interviews made during the documentation period of this work, the model is still starting, with more time the initial problems will be overcome and the cluster approach will show its usefulness for the coordination of the humanitarian logistics. Nowadays, as Altay and Labonte (2011) reflect, the system already improved the collection, processing and dissemination of information through generating clear lines of accountability and reporting and pooling resources.

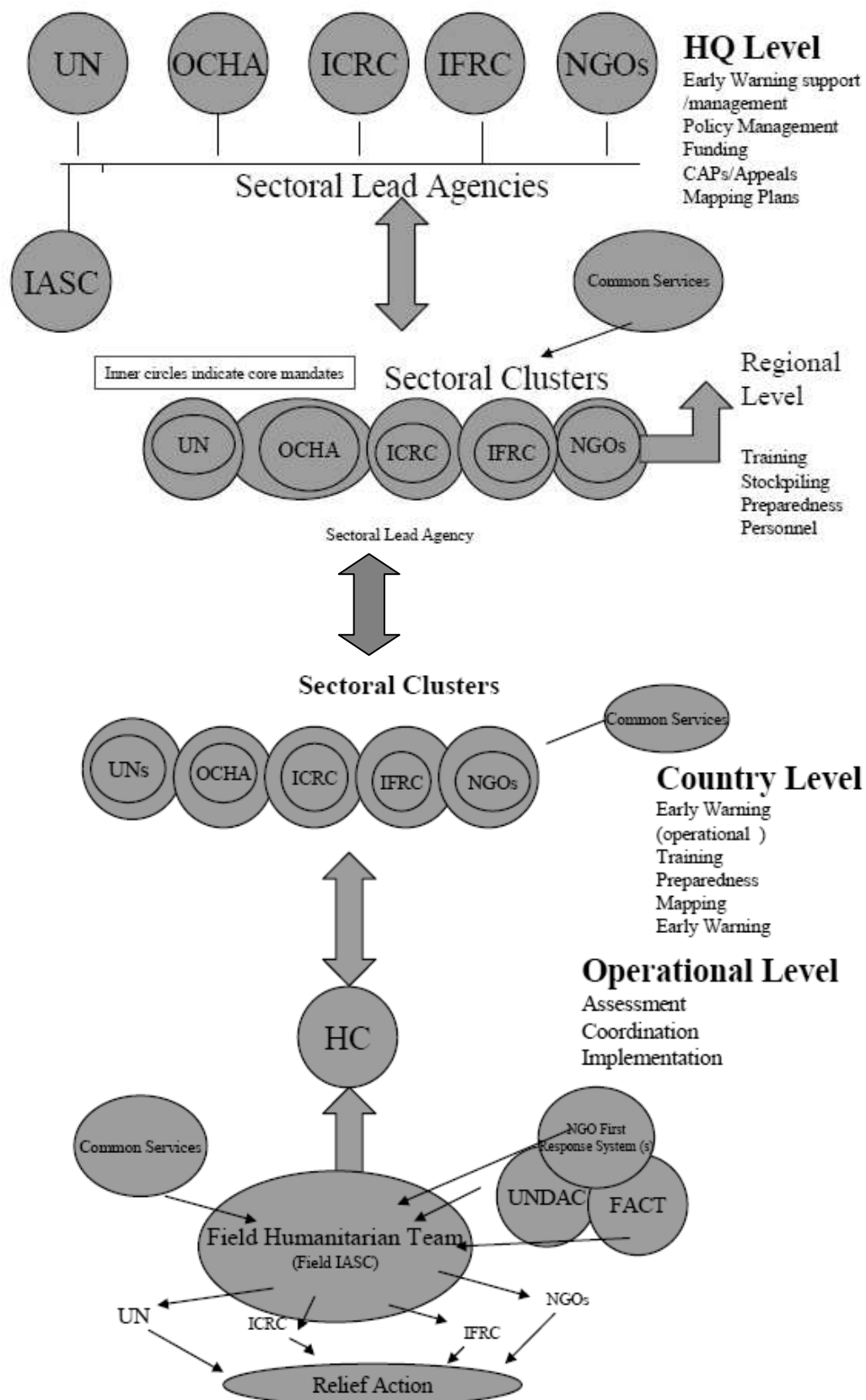


Figure 16. Cluster Approach. Source: Adinolfi et al. (2005)

The development of humanitarian supply chain management after the tsunami of 2004 has been really important. It can be seen comparing the results of the operations in Thailand's tsunami and in Jakarta's earthquake in 2006. First of all, Petit et al. (2011) reflect that 88% of the teams working in the tsunami field were international, just 38% of those organizations had assessment teams from the affected areas and only 58% used logisticians in their assessment teams. As Fritz Institute (2007) shows, the time of response for the tsunami was 18 days with a cost per family of 800\$ while for the Jakarta earthquake the time was reduced until 3 days and the cost per family was around 142\$.

### 3.2.7. Information Technology applied to HSC

Larsson (2011) cites Fritz institute (2006) saying that, according to this institute, humanitarian aid agencies are 20 years behind the large corporations in adopting today's fundamental tools of logistics in SCM. This is a clear disadvantage for the sector and something that needs to be developed.

One of the fundamental tools used in the commercial supply chain are the Information Technologies and nowadays there are some interesting projects related with the IT also in the humanitarian field.

On December of the same year that the Fritz institute was announcing the underdeveloped tools of the humanitarian logistics, the institute finished the first beta version of the project HELIOS. This project is a comprehensive supply chain software solution that enables effective and accountable delivery and management of the vast amount of goods and donations distributed to more than 200 million people affected every year by catastrophic disasters around the world. HELIOS automates five critical humanitarian supply chain activities: request processing, project management, mobilization, procurement, and warehousing. (Humanitarian Logistics 2011)

Some of the opportunities that this kind of technological solutions add to the humanitarian organizations are: (Humanitarian Logistics 2011)

*Speeds Aid Delivery:* Streamlines critical humanitarian supply chain activities

*Increases Preparedness:* Makes hard data available to enhance planning capabilities at headquarters and in the field

*Lowers Costs:* Provides real-time pipeline visibility to reduce inventory and transportation costs; maintains historical data on suppliers resulting in improved ability to negotiate price with vendors

*Enhances Accountability:* Provides data for accurate reporting to donors; enables standardization process and procedures to improve data collection and minimize waste



*Improves decision making:* Gives visibility into all levels of relief operations enabling informed and timely decisions within and across organizations

*Maximizes Effectiveness:* Provides an opportunity for greater collaboration, coordination and resource sharing within the international humanitarian community

Before to create the software “HELIOS”, Fritz institute, in partnership with IFRC, developed Humanitarian Logistics Software (HLS). The HLS allowed the reductions in time response from 18 days in 2004 Asian tsunami to 10 days in 2005 Pakistan earthquake and to 3 days in 2006 Indonesia earthquake and tsunami (Fritz Institute 2007). As it could be confirmed during the interviews made, the HLS continues being the software used by the IFRC for its logistics management.

Seipel (2011) cites other examples of IT developed recently like the project Compas used by WFP or SUMA, the regional Latin American platform supported by World Health Organization.

The Compas method is a Quality Assurance method designed specifically for humanitarian aid. It can be used for two purposes: project management and project evaluation. Its software solution was called Dynamic Compas and since 2011 it was replaced by SIGMAH. (Compass Project 2011)

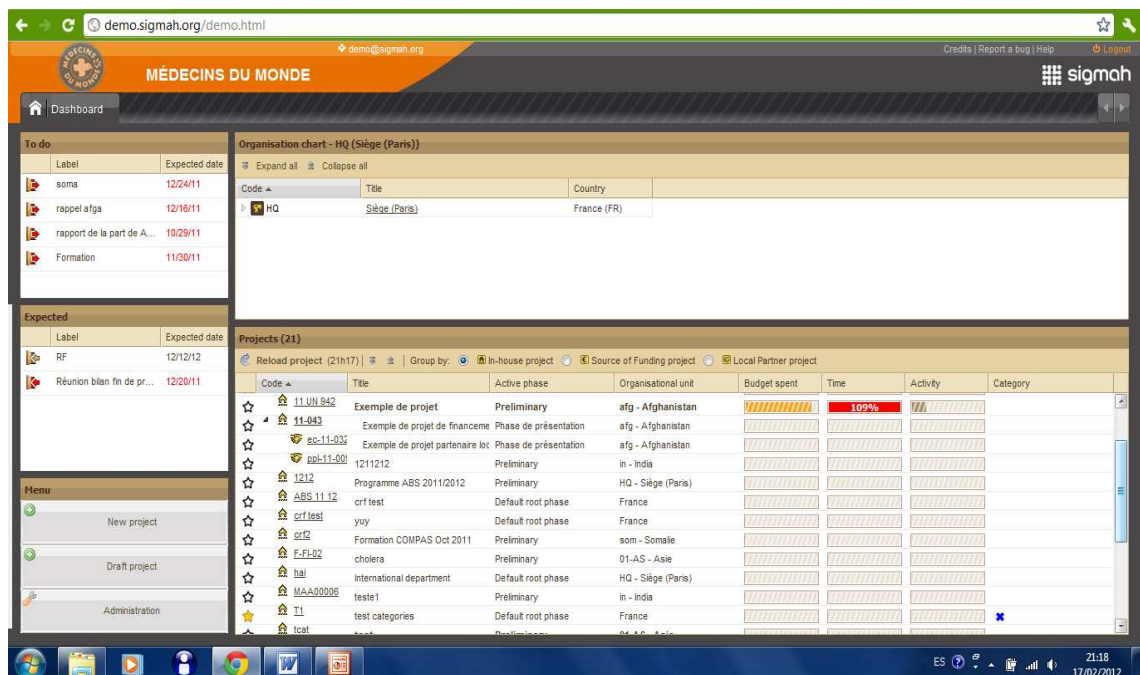


Figure 17. Screen of SigmaH software (demo version). Source: SigmaH (2012)

These are examples of the development of IT tools for humanitarian logistics nowadays. However, the sector is still far away from the commercial one, not only because of the tools used, but also because of the lack of experience using them.

### 3.3. Summary and Comparison

	Commercial	Humanitarian
Definition	The material and informational interchanges in the logistical process stretching from acquisition of raw materials to delivery of finished products to the end user	Flow and storage of goods, materials and money, as well as related information from the point of origin to the point of consumption for the purpose of alleviating the suffering of vulnerable people
Developments	<ul style="list-style-type: none"> <li>- 50s: TQM</li> <li>- 80s: JIT</li> <li>- 90s: Lean Policies</li> </ul>	<ul style="list-style-type: none"> <li>- 80-90s: Internationalization (IFRC, Oxfam Int.)</li> <li>- 2005: HRR → Cluster Approach</li> </ul>
Financing	<ul style="list-style-type: none"> <li>- Profits (Customers)</li> </ul>	<ul style="list-style-type: none"> <li>- Donors</li> </ul>
Flows	<ul style="list-style-type: none"> <li>- Material</li> <li>- Information</li> <li>- Money</li> </ul>	<ul style="list-style-type: none"> <li>- Material, Information, Money</li> <li>- People</li> <li>- Knowledge and Skills</li> </ul>
Measurement	<ul style="list-style-type: none"> <li>- Balanced Scorecard (KPI)</li> <li>- SCOR</li> <li>- Financial Perspective</li> </ul>	<ul style="list-style-type: none"> <li>- Direct adaptation from commercial measurements</li> <li>- Difficult environment for field data</li> </ul>
Management Cycles	<ul style="list-style-type: none"> <li>- Total Quality: PDCA (Plan, Do, Check, Act)</li> </ul>	<ul style="list-style-type: none"> <li>- Disaster Management Cycle: Prevention, Disaster, Response, Recovery.</li> </ul>
Standards	<ul style="list-style-type: none"> <li>- Competitive Advantage</li> <li>- Can be Compulsory</li> </ul>	<ul style="list-style-type: none"> <li>- Establish minimums</li> <li>- Allow Collaboration between organizations</li> </ul>
Ethic	<ul style="list-style-type: none"> <li>- CSR</li> </ul>	<ul style="list-style-type: none"> <li>- Humanitarian Principles</li> <li>- Humanitarian Families</li> </ul>
IT	<ul style="list-style-type: none"> <li>- Infrastructure (interface, databases, and system architecture)</li> <li>- DSS</li> <li>- High Development</li> </ul>	<ul style="list-style-type: none"> <li>- Software adapted from commercial (HLS, HELIOS, Sigmah, etc)</li> <li>- Less Developed</li> </ul>

Table 4. Comparison between CSC and HSC. Source: Own Elaboration.

## 4. Analysis of SC Characteristics

To obtain a more clear comparison between both supply chains, and not only the different definitions, it is recommended to use the SWOT analysis for each sector. By this way, the characteristics already cited can be classified depending on which ones could be seen as strengths or opportunities for each sector, and which ones are weaknesses or potentially risky. After this analysis, and based on its results, future strategies can be developed to take advantages of the opportunities, minimizing the risks, using the strengths and trying to correct the weakness.

Usually this method is referenced to just one company and its implementation to a whole industry has special characteristics, for this reason first of all it is necessary to define the concepts of the analysis and how they are going to be used.

As Pahl and Richter (2007) define in their research, the Strengths are the capabilities of an organization and can be used to obtain a good performance; the Weaknesses are the factors, within the company, that can be problematic for achieving the goals marked; the Opportunities, are “the trends, forces, events and ideas that the company can capitalize on”; finally, the Threats are defined as the characteristics out of the companies’ control that they have to think about how to avoid or reduce. (Pahl and Richter 2007)

In the case of this work, the Strengths are common, at least, for the majority of the agencies within the sector (if there are exceptions, these will be indicated). For the Weaknesses, like happened already with the Strengths, as the study is related to the whole sector, the concepts analyzed are part of the whole industry. In this case, the Opportunities will be the characteristics of the environment of each supply chain that can be used by organizations to improve their performance. The Threats analyzed here follow the definition previously cited.

To conclude the explanation of the analysis, as the study is related to several organizations at the same time, in this case the “internal” and “external” factors have been changed for the characteristics that can be controlled by the agencies (keeping in mind that the actions of one organization cannot change the common characteristics of the sector) and the ones that are just part of the environment where these agencies have to operate.

The selection of the points shown was made according to the aim of compare the commercial and humanitarian logistics. For this reason some points, which usually appear in the literature, have been omitted if their exposure were not considered relevant for this comparison. Because of the same reason, some characteristics considered by other text less important, have been added in order to explain the differences between both supply chains.

## 4.1. Commercial Supply Chain

### 4.1.1. Weaknesses

#### *Non-skills:*

According to Tomasini and Van Wassenhove (2009), it is not difficult to find examples of companies which already have had financial losses because of their impossibility for respond to short-term changes in the demand or in the supply chain. Tomasini and Van Wassenhove (2009) use the concept “agility” to define this skill and it can be seen in the humanitarian sector.

Other “non-skill” from the commercial sector is the low adaptability that could show this industry. Citing Tomasini and Van Wassenhove (2009), the commercial companies have a slow response modifying their plans and designs if exist any change in the market environment.

#### *Dependency:*

It is normal to find companies specialized just in one step of the chain. This could be a good approach to obtain better efficiency by improving the core competences of a company with the resources (of money and employees) saved from the investments that other competences would need. But the result of this approach is a completely dependency due to the lack of skills and capacity to operate by themselves.

When the strategy of a company depends also on the opinion of others, the relationships are more complex and everything should be controlled carefully [see chapter 5].

Especially dangerous could be the relationships based in Just in Time strategy. Due to this strategy the level of inventory is lower (cheaper and faster to manage) but it implies a reduction of buffers for unexpected situations and a higher exposure in case any problem appears (in the own company or in other one of the chain). (Lyson and Farrington 2006)

#### *Control:*

To control these complex networks and ensure that everything works as it has to do it, the industry developed a bureaucracy that allows a correct ordination of the activities and operations. However this system also subtracts speed to the supply chain.

This is a constant issue in the literature, for example the Information Resources Management Association cites Bennis (1996) when it says that “bureaucracies, with their functional divisions, and hierarchical structures, seemed too slow to compete at the speed of information.” At the same time, Adler (1999) defends the positive point of the

bureaucracy giving direction, structure, stability and control to the organization (see Khosrow-Pour 2002).

It is a controversial tool that if cannot be avoided because of the importance of its results, it is necessary, at least, to improve it.

#### **4.1.2. Strengths**

##### *Cost:*

The commercial companies, looking for profits, are efficiency oriented, as Moore and Taylor (2011) explain. Actually, as Pagano and Rowthorn (1996) add, the profits can be understood as an index of the efficiency of the company.

Petit et al. (2011) give a numerical example about this point; the percentage, of the total cost of the supply chain, related with logistics in stable conditions for a commercial company, is less than the half of the percentage related with the humanitarian logistics in an emergency operation (70-80% estimated from the total cost).

##### *Speed:*

The commercial companies can have problems with the agility and adaptability [see point 4.1.1] however when the plan can be followed without problems, the speed of the commercial logistics is quite high.

The reasons of this speed are the experience of these companies, the knowledge acquired, the professionalism of the employees, and the grade of development of the infrastructures that they use together with the important amount of resources that they have.

As happened also with the cost, the speed has been considered one of the core factors of success of this industry so the sector has been focused on improve it since long time ago. Nowadays the cost and speed are considered not enough for obtain a competitive advantage but they are still being basic for a well-performance.

##### *Technology:*

According to Ellis (2011), the “technology that has evolved in the commercial world around Supply Chain and logistics has a critical place in development.”

The technology does not only allow the companies reduce costs and increase speed, it also makes easier the management of the network due to the development of the Information Technologies [see point 3.1.5].

The new technologies also need qualified employees to use them, something that usually can be afforded by the companies because the environments where they operate are enough developed and these qualified people can be found. The companies also give trainings to their staff to teach them how to use the new technologies and improve their skills, actualizing, by this way, their employees periodically.

#### *Professionalism:*

Due to the importance of the sector and the interest that the companies have about it, there is the aim of professionalization of the industry. For this reason, the logistics department is common in all the industries related with the supply chain.

As a good point of the specialization (criticized earlier because of the dependency that it can generate), nowadays exist an important number of companies focused on logistics. These companies can offer better results than others that also have to manage the production, manufacturing or the sales of the product.

#### *Environmental management:*

Nowadays, people are made aware about the environment and how their way of life can affect it. One example of this is the repercussion of documentaries as “An Inconvenient Truth”. Just counting until 2007, this documentary obtained more than 1.000.000 of DVD sold in USA and 700.000 books, just in English (Geli 2007).

Knowing this interest, the companies are investing in environmental projects and promoting their sustainability plans. The companies related with the transportation industry are specially focused in the carbon emissions. There are also different initiatives for implement the use of alternative energies in the sector.

One example can be the project “Bosque BlueMotion” (BlueMotion Forest) of Volkswagen, this company is committed with the consumers to plant a tree for each car sold it (giving the option to the consumer for buy extra number of trees to compensate the emissions that he or she will produce driving the car). Nowadays, the forest, situated in Albacete (Spain), has more than 250.000 trees (E. C. 2011) and the company has started new reforestations.

These initiatives have created an important knowledge for the commercial supply chain. The new skills allow the companies to implement sustainable management strategies for their processes.

### 4.1.3. Threats

#### *Demand:*

Tomasini and Van Wassenhove (2009) explain the threat of a dynamic demand and the disruption risk that is present in the commercial supply chains. Different forecasts can be used to try to reduce the uncertain of this demand dependency but, as Eades (2010) explains, the first forecasts' rule is that "the forecasts are always wrong", without forget the other two rules, which explain that as longer in time and less aggregate, less accurate will be the study. This does not mean that it cannot be implemented some methods to increase the efficiency of them, however it is necessary do not forget that a forecast is not an absolute truth.

#### *Profit oriented:*

It is the main goal of the commercial companies, the profits (this is one of the most important differences between commercial and humanitarian agencies; these second ones are also called Non-Profit Organizations).

The past is difficult to erase, a lot of people are still remembering cases of hard work conditions at factories which were suppliers of multinational companies. The idea of maximize benefits follows all the initiatives in this sector and it does not help these companies for change the opinion of the people about them.

Even nowadays there are examples of hard work conditions related with important brands as can be the case of Apple in China. From the beginning of 2010 until May 2011, 14 workers at Foxconn (an Apple's supplier factory) killed themselves due to their work conditions (Daily Mail 2011).

However actually, the companies need these profits to continue their work. They can obtain economic aids, loans, etc. but, in the end, the majority of their funds comes from the own benefit that they can produce.

Nowadays, the companies are expending a lot of resources to show their CSR and environmental sustainability trying, by this way, to change it.

#### *Economic crisis:*

The actual moment is one of the most risky situations in the commercial sector. As it was explained earlier, during a crisis period the consumers try to save money and the consumption is reduced dramatically. Less consumers means less demand and more competition between companies; just the ones with enough resources (maybe because they already planned a situation like the actual one) could survive and they are still needing to improve their performance to obtain advantage from their competitors.

But the normal market factors are not the only ones that have been implicated in this crisis. Due to the critical situation of some countries because of their finance balance, the governments started to increase the taxes and the result is less profits for the companies (because of direct taxes and also because of the lower sales that a high tax produce due to the extra cost for the consumers).

*Information flow in a complex network:*

Even after all the investments made for the development of this department, the information continues being other of the risk for commercial organizations, specially the information sharing activity.

After the development of the inter-company relationships, the network is every day more and more complex. If the number of companies participating in the supply chain is increasing, the information shared is really important for the correct work of all of them together and also more complicated.

One example of the risks related with the information sharing in the networks is the bullwhip effect. This effect, as Svensson (2005) explains, is the result of a deficient information sharing, not enough market data or wrong forecast. The evidence of this effect is the variation in the level of stock, being higher upstream than in the downstream part of the chain.

*Inertia:*

Other of the risks of the commercial sector is the idea that everything is already made. Some people can think that as the commercial supply chain has been studied since long time ago and, as a developed industry, the results were already improved, there is nothing more to do. This idea makes the companies to continue just with the plans fixed without think in more investments and developments.

However it is necessary to take in account that the environment is dynamic, continuously changing and every day more competitive. Only the companies that can be adapted to the new changes will survive. Can be mentioned the example of the actual crisis situation where the companies have to obtain an extra advantage to differentiate from their competitors for achieve their goals.

#### **4.1.4. Opportunities**

*Globalization:*

The commercial organizations discovered the benefits of think globally long time ago. Citing an example, Sengupta et al. (2006), affirm that the globalization allows the



companies to increase their competitiveness and, at the same time, open new markets expanding themselves geographically and reducing costs.

All the globalization initiatives have to be carefully studied, the things are not better just because they are bigger or diverse; everything has to follow the strategy of the company, being calculated and planned previously.

#### *Alliances:*

The alliances between companies give a lot of opportunities to them. They allow the specialization and cost sharing, they can add experience and new methodologies for increase the efficiency of the supply chain, etc.

Using one example of Beverland and Bretherton (2001), we can see the case of the airlines alliances. In this case, the motivation of the alliance is multiple, from increase the service offered to the customers to create a brand recognition and loyalty. This kind of alliances allows the companies to reduce investment costs and share the costs of maintenance. At the same time, new markets can be opened by the hand of local well known organizations. (Beverland and Bretherton 2001)

#### *Governments:*

The crisis period has been noticed by the society due to the worse live conditions because of the reduction of the economic capacity and even the losses of their jobs. The governments need to generate employment and revitalize the productivity of the countries for achieve the goal of grow up again as they were doing before the crisis period. This is the only way to ensure the happiness of the people that will decide if they are going to continue leading the respective countries they are governing now.

For these reasons, the governments are giving different kind of aids to the commercial sector. One example was the automobile manufacturers in Spain. The automobile industry is a core sector in the country, there are factories of SEAT in Cataluña, Citroen in Galicia, Ford in Valencia, Mercedes in País Vasco, etc. (Alcocer 2010). During 2009, the bad results of this industry made the government to promote the sales giving 2,000 Euros for every new car bought (Ministerio de Industria, Energía y Turismo 2009).

Also is common during these periods the loans to the small and middle size companies that due to the crisis cannot afford their costs temporary. This option depends also on the capabilities of each country; if the situation is critic even the loans can be denied.

#### *Logistics required:*

One of the positive points for the logistics sector is the importance that it has nowadays around the world. There is always demand of logistics because it is the base of the modern commercial system. Actually, since the human started to live in cities and had

the necessity of keep food and use tools, the logistics have been used for the whole humanity.

One example was internet. At the very beginning some logistics companies were afraid about the possibility that the e-mails could subtract demand from ordinary mailing. However people continue sending physical letters and package and internet is being used as a strong tool for manage them.

When the demand decreases, the competence is higher and the profits for each company lower, however there are always customers requiring the services offered by this sector to cover their necessities.

### *Knowledge:*

As it was mentioned earlier, the commercial supply chain is a well-known topic within the business literature. The knowledge acquired appears in its both categories:

Explicit: It is the knowledge about “what” to do, objectively, independently of the context and codified in a way that can be understood by the receiver. (Smith 2001)

Tacit: It is the knowledge about “how” to do something; it is more based on individual experiences. (Smith 2001)

Other definitions have been enunciated by Collins (2010) who affirms that the explained knowledge is the explicit one and the tacit is the knowledge that is not explicated. Both are very important, and the best base for continue developing the sector.

Every time the sector is being developed new strategies, technologies and ideas to be implemented by the organizations related with this industry. It is necessary do not think that everything is already made and that now the companies just can wait because, as it was explained already, this is really dangerous taking in account the dynamism of the environment [see point 4.1.3].

The knowledge collected allows future developments, for the commercial sector, in a more effective and faster way than without it.

### *Humanitarian sector:*

The humanitarian sector gives to the commercial logistics the opportunity of a new market with an interesting potential of development. In addition, the demand of services of commercial logistics from the humanitarian sector was not affected by the crisis period being even higher due to it.

In addition, the characteristics of the humanitarian logistics have some factors in common with the commercial ones and the commercial companies can use their skills to improve them and obtain benefits from the efficiency of their performances.

There are many things that can be learned from the humanitarian logistics sector too. For instance the knowledge that they could acquire from the regions (usually less developed) where humanitarian organizations are working and that could be future markets for the company. Other examples are the skills of adaptability and agility that can be learned from the experience of the humanitarian agencies as was cited by Tomasini and Van Wassenhove (2009).

## **4.2. Humanitarian Supply Chain**

Before talk about the humanitarian analysis, it is interesting to know that, as a relative new topic for the academic texts, the majority of the information collected is about the weaknesses and threats (something normal for an undeveloped sector). In the future, together with the development of the humanitarian logistics, and after several studies, the strengths and opportunities of the sector will be more numerous and interesting.

### **4.2.1. Weaknesses**

*Information:*

This factor is one of the most critical ones for the logistics sector and, in the humanitarian case, one of its main weaknesses. Due to the special characteristics of the humanitarian environment (urgency of the activities, nervous, not enough resources or time, etc.) the quality and amount of the information shared in the different projects is usually lower than required.

In addition, the investments in IT are not high either and the efficiency of this process is much lower than the one in the commercial sector. Seipel (2011) cites Gustavsson (2003) affirming that “very little capital has been invested in the development and implementation of Modern Manager Information Systems, information technology or logistics systems”. As also Buatsi (2011) reflects, without take in account the big international aid agencies (like IFRC or World Vision) few to none of the local NGOs in Africa use an Enterprise Resource Planning Systems (ERP).

Nowadays, the collaboration between companies is rising up and the information sharing is basic to ensure a correct performance of the activities. Christopher and Tatham (2011) affirm that the information sharing is a common weakness running through agile supply networks that depends on the synchronization of their members.

Recently some projects appeared in order to improve the situation as the examples of HELIOS, Compass or SUMA [see point 3.2.9]. The process is not fast and needs time but it is necessary to achieve the targets planned.

### *Environmental Sustainability:*

The disaster response, usually related with the humanitarian sector, is focused on saving lives and stabilizing the living conditions. The necessity of a fast response often does not give enough time to the agencies to assess possible negative environmental impacts of their interventions. (Kelly 2005)

Kovács (2011) affirms that “The humanitarian SC has yet to embrace the challenges of becoming green” and the guidelines developed by Kelly (2005) and CARE International could be a first step to reduce the lack of environmental management related with the humanitarian industry. The guidelines redacted provide a way to recognize and mitigate the non-desirable results of the disaster emergency operations. One of the advices that appear in the text is that the decision to accept or not an environmental damage as completely necessary for the effectiveness of a relief delivery should not be taken by the agency without consult with the representatives of the beneficiaries if it is possible. (Kelly 2005)



Figure 18. Medical waste disposal in Haiti. Source: Oneresponse (2011)

### *Measurement:*

The humanitarian logistics has been developed looking at the commercial one, this was really useful sometimes because it is true that there are several things in common between them, however, it cannot be forgotten that humanitarian supply chain also has its specific characteristics.

One of the factors copied from the commercial sector was the measurement. The humanitarian logistics cannot be measured just in terms of cost and time, as Tomasini and Van Wassenhove (2009) explain, it is judged in terms of impact, how many families they help, how many people rescue, etc. In general, this is more difficult to measure and, as Wakolbwger and Toyasaki (2011) explain, the indicators used usually for

measure logistics performance cannot reflect the real quality of the field work and better indicators continue missing.

One of the best ways to know if the humanitarian agencies are working in a correct way could be ask directly to the users of the aid, however according with Moore and Taylor (2011), the voice of the beneficiaries is too weak and even unheard by agencies that sometimes are more interested in the competition for funds than in their humanitarian performance.

Within the humanitarian sector, especially after 2004, the organizations are taking more care about quality and use standards, as the explained ones like SPHERE project [see point 3.2.5]. But the importance of quality standards that the commercial industry shows is still too far away from the situation within the humanitarian sector, being the standards used there just a list of minimums to allow the team work in the field.

#### *Unprofessionalism:*

Blansjaar and Van der Horwe (2011) explain that 1200 NGOs (national and international) were working for the response to the 2004 tsunami and a similar number were registered also with the UNOCHA in Haiti in the 3<sup>rd</sup> month after the earthquake. There are really high numbers of organizations and each one with its own structure, which makes more complex the network. In addition, as Tomasini and Van Wassenhove (2009) reflect, in environments where things happen so fast, actors sometimes do not fully understand their impact on the rest of the supply chain, it could derivate in an even lower efficiency due to ambiguous goals.

Each agency also has its own knowledge that, sometimes, it is not good enough for make a real useful work in the field. Dannatt (2011) affirms “While I have worked with many very capable and effective NGOs over the last 20 years, I have also worked with completely inefficient and ineffective ones, adding no value whatsoever.”

The lack of professionalism in the humanitarian logistics make that some agencies, that do not consider the logistics a core department for their performance, do not have even a full-time logistics director or it is used just for advices, as it was denounced by Moore and Taylor (2011).

The training is also really important to achieve a more professional staff for the missions. Some agencies, like IFRC, have its own training system, in the case of IFRC: the IMPACT course. From the interviews made for this work, it is demonstrated that trainings have to be followed also by field missions to use the knowledge acquired and also earn the experience that only the work on the field can give to the delegates operating there.

### *Funds:*

Wakolbwger and Toyasaki (2011) affirm that the actual funding systems are other of the weakness of the humanitarian logistics and one of the causes of inefficiencies cited in the literature.

The humanitarian logistics usually depends economically on their donors. As much funds an agency obtains, as much donations it can attract [see point 3.2.4]. The explanation is that the organization can achieve a more efficiency performance reducing costs by economies of scale or using its strong position to obtain better prices from the suppliers. The visibility of the agency will increase also due to the possibility of higher investments with this aim. These methodologies are going to make donors trust more on the organization and they will invest more on it thinking that the way it uses their funds is better than others. On the other hand, the agencies with lower funds cannot obtain them because the competition is too high and their visibility and opportunities of better efficiency are much lower than the big organizations.

If we focus on the competition between agencies with a similar size, then the problem is that while they expend time and resources to obtain the funds, they cannot focus on their real humanitarian objective.

Other problem related with donors is the earmarked donations. The earmarked donations are those funds that have to be used just for the objective the donor is marking to de organization that is receiving the funds. Nowadays the earmarked donations are usually related just to the location where the funds have to be used (the aim often is obtain a visibility for the donor in more media-focused or strategic places) but, as it could be extracted from the interviews made for this work, earlier the donors could even select the population who had to receive the aid.

As Wakolbwger and Toyasaki (2011) explain, official aids are usually earmarked donations. This can reduce the flexibility of the agencies and is one of the reasons why organizations like MSF or IFRC are so proud to announce at their annual reports the high percentage of funds from non-official public agencies. For example, in the financial report of MSF 2010 can be read that 5.1 million of individual donors and private funders donated the 91% of the incomes of the organization in 2010 (MSF 2010).

Another added problem is the non-required donations. When the amount of donations is bigger than the capacity of the organization for manage them, these donations becomes a logistics problem. This is not new, the Pan-American Health Organization already reported that "unsolicited clothing, canned foods and, to a lesser extent, pharmaceuticals and medical supplies, continue to clog the overburdened distribution networks during the immediate aftermath of highly publicised tragedies" (PAHO 2000).

A recent example could be the earthquake of Haiti in 2010 where, according to Besiou et al. (2011), due to the important media coverage and the willingness of people affected, a high amount of donations to “The People of Haiti” could not be managed by the organizations on the field because of the delays created in the airport and further bottlenecks for its storage and distribution.

#### *Resources:*

The resources of the humanitarian organizations are limited. This situation has different reasons. Sometimes the resources are limited because the organizations want that; for example, in order to obtain faster operations. However, generally the reason is the limited capacity of these agencies; at least if we compare with other actors that also appear in the humanitarian environment as would be the commercial companies or even the military.

To show the opinion from the military, it can be shown the ideas of Dannatt (2011) about this fact. He says that the humanitarian organizations often lack resources (for example they have to look for their own accommodation, food or transport), and that even UNHCR cannot use a brigade headquarter in the field as the ones that the military have. For Dannatt (2011) “travelling light have advantages, but to sustain operations in all conditions over protracted periods needs a structured command team and the resources to sustain them.”

In addition, the level of efficiency of humanitarian sector is lower than the commercial one. This is also one of the conclusions obtained from the opinion of the people asked in the survey [see Chapter 8]. Lack of resources with a low efficiency performance reduces the number of projects developed and their effectiveness.

### **4.2.2. Strengths**

#### *Experience:*

The recent publication of literature related with the humanitarian logistics could seem that this industry started just the last decade from nothing, however some of the humanitarian organizations have been working, and acquiring experience also in their logistics, since long time ago. For example Oxfam (the Oxford Committee for Famine Relief, and origin of the actual Oxfam International) was founded in Britain in 1942 and the Red Cross was founded by Henry Dunant in 1863 (the IFRC was born in 1919) (Oxfam 2011; IFRC 2011).

The results already showed by these organizations from their previous operations also report them the good image that they have now and the credibility of the donors. Their activities also have some international recognition like the Nobel Peace Prize that has

been conceded 3 times to the International Committee of the Red Cross (ICRC) in 1917, 1944 and 1963, and one to Médecins Sans Frontières (MSF) in 1999 (Nobel Prize 2011).

This allows the big agencies to share their knowledge with the others and try to find more efficient operations due to a network where they can be the orchestrators looking for the contracts required and helping smaller and younger organizations to focus on their strategies and plans according with their capabilities.

Another positive point from the experience is the training that the missions give to the participants. The field staff workers have to use skills of leadership, fast decisions or high adaptability to continuous changes in the environment; skills that are important for their humanitarian work but that can be also interesting in other sectors like the commercial logistics.

In addition, the relationships already made with local personal and organizations, where the humanitarian agencies work, allow them to understand better the cultural differences involved in the operations running in these places. This experience also gives to the international humanitarian actors the knowledge to make possible a more effective collaboration with the local staff.

#### *Volunteers:*

The volunteers are the real enablers of the humanitarian industry. According to the interviews made for this work, the main reason why IFRC can obtain one of the lower fundraising cost percentage are the volunteers. The non-profit work makes possible to count with a higher number of people in the different operations.

One of the most important factors of the volunteers is their motivation. The Maslow's Pyramid, earlier explained, could give us the importance of it [see point 2.2]. One person need earn money to satisfy its physiological necessities and, after that, to feel safe, part of the group, etc. When the person already has what it "needs", then can try to obtain what it "wants". And as it was explained during the interviews made for this work, everything made voluntary is better because people will effort more doing what they want than if they have to do it compulsory (in this second case the general result often will be achieve the minimum required).





Figure 19. Volunteer of the Finnish Red Cross collecting funds selling hot chocolate in Helsinki. Source: Own elaboration

#### *Emergency skills:*

In addition, the humanitarian agencies have been improving their “emergency” skills with every operation where they were involved. Due to the hard conditions of the environment where these organizations work and the ability of them to achieve their goals, nowadays, the humanitarian organizations are a reference of agility and adaptability all around the world.

As Apte (2010) defines, the agility is the “quick and economical response to fluctuations in supply and demand” while the adaptability, defined also by Apte (2010), are the skills to set up, change the structure and modify the strategies in a fast way.

Authors as Tomasini and Van Wassenhove (2009), think that the commercial sector has to learn these abilities from the humanitarian supply chain in order to obtain the advantage that they need for compete in the world nowadays.

### **4.2.3. Threats**

#### *Control:*

Within an environment with so many organizations working together and where the time is so critical, the control of all of them is really difficult. Exist already guidelines (and standards like the SPHERE project) to establish a common basic knowledge and a criteria to follow it but do it or not depends on the own organizations.

As Kovács (2011) says, “Everybody wants coordination, but nobody wants to be coordinated.” The UN, with the cluster approach made a first step to order the sector but as Moore and Taylor explain, really UN only can try to influence and persuade but cannot control all the programs of the different NGOs (Moore and Taylor 2011).



However, in the case of several humanitarian organizations, they have to be ready for an immediate response and it does not allow the organizations to reduce costs by this way, at least not the costs related with the emergency response. On the other hand, the humanitarian agencies could try to use the efficiency in cost as much as possible for other operations where the time of response is less critical.

#### *Disaster:*

In a disaster (natural or non-natural) there are more challenges than in a stable environment. Starting with the infrastructures, after a disaster the infrastructures are devastated. If the disaster is an earthquake, the buildings and roads could be inoperative; in case of a war, the bombs can destroy also basic constructions as bridges or factories. It means that humanitarian organizations cannot operate, unlike a commercial company, throw a well-known infrastructure network and they have to adapt themselves to a completely unknown situation.

It cannot be forgotten either the original infrastructure because, as the operations of the humanitarian agencies usually take place in undeveloped countries, in normal conditions, the level of the facilities is lower than the one of the infrastructures that the commercial sector uses regularly.

In this environment the safety of the staff is also complicated. According to Dannatt (2011), the operations in areas without front lines, real security or protection, and where access is difficult, ONGs are often vulnerable to warlords, bandits and much more factors related with the conflict. The principle of neutrality, even when it is useful to allow the organizations to operate independently, is not an assurance of life.

Because of the special situation of the undeveloped countries or just due to the disaster, the corruption is another of the challenges involved in the humanitarian environment and forms part of the everyday culture of these organizations (Dowty 2011). The humanitarian organizations sometimes have to pay to avoid delays or even just to work in some places ensuring the live of their staff.

The Secretary of State of USA, H. Clinton (2009), reported that just during 2008, 260 humanitarian aid workers were killed, kidnapped or seriously injured in violent attacks.

And the victims of the disaster add also a challenge to the humanitarian sector. To manage the behaviour of people, after a critical situation as a disaster, could be a problem. For example as Whittow (1980), cited by Petit et al. (2011), explains, people tend to remain the area of danger rather than leave the place looking for a safer one. Some of the people lose everything in the disaster, house, family, etc. and their aim for safe their own lives could be lower than the one that the humanitarian workers have.

In addition, the cultural differences between the humanitarian staff and the beneficiaries of the aid can produce misunderstandings and more problems. McClintock (2009), cited by Seipel (2011), explains that one way to solve the cultural problem is to implement flexible procedures into the international humanitarian operations to accommodate unexpected ones.

#### *Politicked environment:*

Other of the risks involved in the humanitarian logistics is the politic one. The governments want acquire part of the good image that the humanitarian organizations have and this intention can rest neutrality to the humanitarian operations. Sometimes, if the organizations do not do what the government wants, this one can stop their activities in its country.

Wakolbwger and Toyasaki (2011) cite Thomas and Kopczak (2005) explaining that the governments have provided a big amount of funds traditionally and this fact has given always a strong influence in the sector (for example by earmarked donations).

The time is other important factor for the political decisions. If the disaster occurs at the beginning of the financial year, the governments have more money available to expend (less money already earmarked) (IFRC 2010); something similar happens if the economic period is better or the elections are close and it needs publicity. As happens with the rest of donors, the media is also important for governments. They will accept easier a donation to places that can report them publicity than other ones that maybe require more aid but no one is going to know who the donor was.

Due also to the aim of earn good image, some governments can make public promises to the agencies that, at the end, or are delayed or directly do not become real. Wakolbwger and Takayasi (2011) add the example of Oluntuba (2005) about the aid promised in Darfur refugee crisis, Western Sudan, and Mitch hurricane, where just 1/3 of that aid was finally delivered.

The coordinator of SismoHaiti (a risk reduction project for Haiti), explained in an article published by Universidad Politécnica de Madrid (2011) that “one of the reasons of the delay in the reconstruction of Haiti is the political instability and the corruption, keeping in mind the important amount of economic funds that the country received by donations.”

#### *Appreciation of logistics:*

The appreciation of logistics for the majority of the humanitarian organizations (the big ones usually are an exception) is relatively recent. For this reason, the sector is not too developed and it still needs a big investment for its improvement. As it was mentioned already, Larsson (2011) cites the Fritz Institute (2006) saying that, according to this

institute, the humanitarian aid agencies are 20 years behind the large corporations in adopting today's fundamental tools of logistics in SCM [see point 3.2.9].

Seipel (2011) denounces the low priority of the investments in logistics capabilities even when logistics and supply chain management are emerging as an absolutely crucial department for the success of the humanitarian operations.

Whiting and Ayala-Öström (2009), add that the lack of recognition of the logistics in the humanitarian operations by donors is a big problem because it means a low level of funds derived for the logistics infrastructure. It is necessary to show them the importance of the logistics cost.

The humanitarian industry is also lesser known than the commercial one. In this case, as Moore and Taylor (2011) explain, "there is not a direct competitive imperative arbitrated by consumer choice." The measurement has to be different and the methods used in commercial world are not always able to work in the humanitarian one.

The literature about logistics in humanitarian operations is also recent but the last years have increased exponentially. The continuity of this fact will ensure the interest of the different stakeholders within the industry and the development of the sector.

#### **4.2.4. Opportunities**

*Image:*

The society has a good perception about the different NGOs due to the goals that these organizations pursue. In the undeveloped countries, the support to the humanitarian activities could be motivated because they are the main beneficiaries of the aid delivered by these NGOs. In the developed ones, where the basic physiologic needs are covered, the humanitarian agencies are supported by the people who want cover their psychological needs by helping others.

The good image also attracts other entities that want to obtain part of this publicity for them. By this way, private companies or governments become important donors and support the different projects that the humanitarian organizations are developing.

Dannatt (2011) affirms that "media often accept the NGO/UN/IO perspective and quote it uncritically" and that this fact allows these organizations to mobilize the public opinion towards their interest. This affirmation is true but, again, as bigger is an organization as more visibility can obtain and more repercussion into the society. And this does not work for all the operations; there are also some disasters with more coverage by the media than others.

In the annual report of IFRC 2010 there is a clear example showing the comparison between Haiti earthquake and the flood in Pakistan. The first one affected to 3 million people while the second one affected to 20 million. The public donors represent the

67% of 314,329,971x0.81 of Swiss francs (which was the funds obtained from the budget that IFRC estimated was necessary to achieve its goals in the field of Haiti) and just a 3% of 130,673,677x0.604 of Swiss francs for the Pakistan one. (IFRC 2010)

The actual image of the NGOs is the result of years working honestly and following the humanitarian principles, however, the image of these organizations can be destroyed when a scandal appears in their financial management or field behaviour.

For example, in 2007 two Spanish NGOs, Anesvad and Intervida, were affected by a judicial process due to a fraudulent use of the funds of these organizations. Just for this reason, Intervida lost 70.000 collaborators from the 351.000 that the NGO had in 2006 (Vivanco 2011); in the case of Anesvad, the 40% of its members left the organization (60.000 from 150.000 members) (Uriona 2009).

The humanitarian agencies have to learn how to use their media impact to keep the attention of the society about the less known projects. At the same time, they have to take care of their management, to avoid scandal risks. The possible partnerships are another important factor for the image of the organizations, these relationships could affect negatively or positively the image of the agency depending on the previous image of the partner. The good image is a powerful factor that has to be managed carefully to do not lose it.

#### *Aid goals:*

The different humanitarian organizations have common aid goals. For this reason the collaboration between them, theoretically, has to be easier than in the commercial sector (directed by individual profits).

It exists already a network of free information sharing between agencies. This network reflects the idea of collaboration in order to obtain common goals even when the technologies used and amount of information still need to be developed.

The creation of the cluster approach also supports the increment of collaboration relationships within the humanitarian industry.

From the interview made for this work, it is extracted the idea that when we think in the future, the key is the centralization. The cluster system is the proof of that; this approach makes easier the coordination on the field allowing a more efficient performance. In addition, the small and medium size organizations that cannot afford their own logistics by themselves can be helped by the big ones, like IFRC, that can offer their services as orchestration agencies. The benefits are for both organizations because by this way, for example, instead of 20 agencies demanding for a transport, there will be just one and the prices can be more reasonable than when a disaster occurs nowadays.

Other example of collaboration could be the webpage [www.logcluster.org](http://www.logcluster.org), supported by WFP (the logistics cluster lead at global level, as explains the own webpage). This

webpage allows the free sharing of information. This web also has different maps and reports from the countries affected for any disaster or under a humanitarian aid operation.

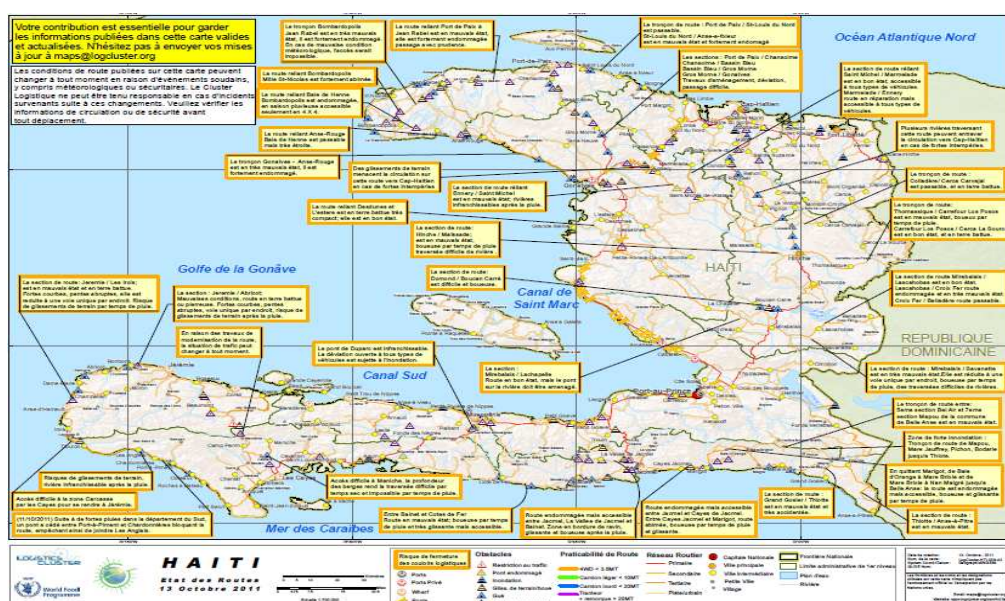


Figure 21. Map with information about road conditions in Haiti. Source: Logcluster (2011)

There are more tools available from this webpage as the “geoportal”. As the webpage [geoportal.logcluster.org](http://geoportal.logcluster.org) (2011) defines it, “the SDI-T (Spatial Data Infrastructure for Transport) Geoportal is a web platform that allows users all over the world to visualize and obtain transport data such as roads, airports, and ports.”

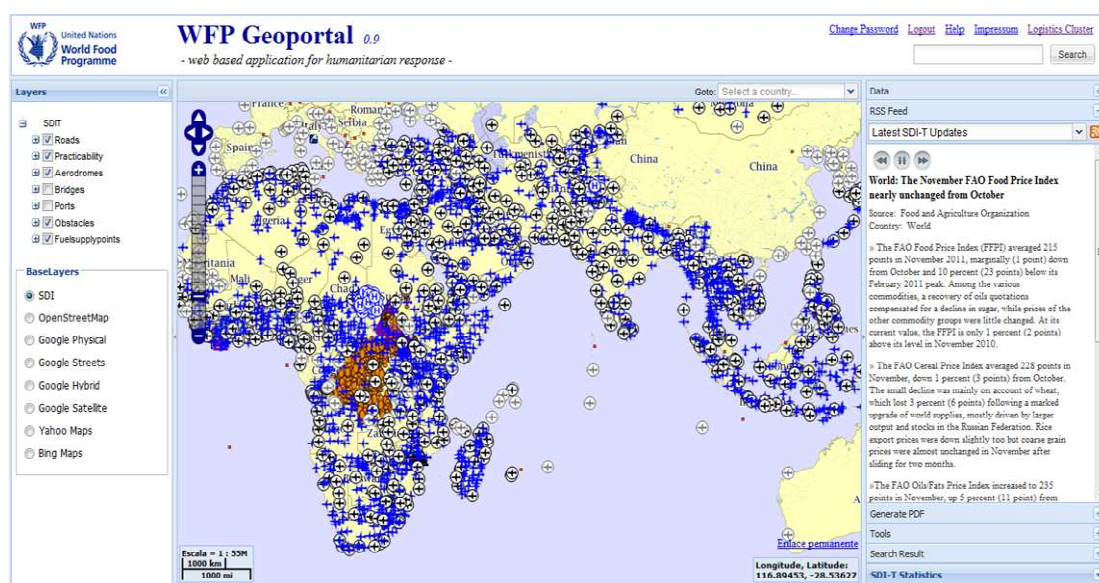


Figure 22. Example of screen in WFP Geoportal with the airdromes and obstacles in Africa and South Asia. Source: Logcluster (2011)



*Commercial opportunity:*

There is other opportunity that the humanitarian sector has to manage, the commercial logistics. This opportunity is especially interesting in a situation like the one nowadays, when the developed countries are affected by an important economic crisis. At this moment, the humanitarian aid appears as a new market that continues demanding logistics services.

As it is shown in several new researches, the humanitarian logistics can learn a lot from the commercial ones. There are many possibilities for development and both sectors, working together, are the perfect partners in order to achieve the maximum benefit. Both have common characteristics that can be used as a base to build future relationships.

The humanitarian organizations have to improve their technology and logistics infrastructures and, at the same time, reduce their performance costs. All of them factors where the private companies are a reference.

#### **4.2.5. Humanitarian Principles**

The principles are difficult for catalogue; some people can think that they are a threat and others that an opportunity. However, it is necessary to mention them at this point because they determine the humanitarian activities. [See point 3.2.6]

As it was shown earlier, the principles of humanity, neutrality and impartiality are the ones that make possible the good image of the actual NGOs and allow them to work in the environment where they develop their programs.

However, these principles do not allow the NGOs to accept help from any of the parts in a confliction (because it means to lose the neutrality), or to accept earmarked donations if this means lose the impartiality of the delivery. In addition, due to the principle of humanity, these organizations are focusing its efforts in risk environments where the lives of the staff are in danger just to save others' lives.

Independently of the convenient or not of follow them, they are the base of the humanitarian aid concept and have to be respected by all the actors that interact with these organizations.



### 4.3. Matrix and Conclusion

Commercial	Humanitarian		Commercial
Weaknesses	Strengths	Weaknesses	Strengths
<ul style="list-style-type: none"> <li>- <b>Low Adaptability</b></li> <li>- <b>Low Agility</b></li> <li>- Dependency</li> <li>- Control</li> </ul>	<ul style="list-style-type: none"> <li>- Experience of Organizations</li> <li>- Volunteers</li> <li>- <b>Emergency Skills</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Information Technology</b></li> <li>- <b>Environmental Sustainability</b></li> <li>- Measurement</li> <li>- <b>Unprofessionalism</b></li> <li>- <b>Resources (Low Efficiency)</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Cost</b></li> <li>- <b>Speed</b></li> <li>- <b>Technology</b></li> <li>- <b>Professionalism</b></li> <li>- <b>Environmental Management</b></li> </ul>
Threats	Opportunities	Threats	Opportunities
<ul style="list-style-type: none"> <li>- <b>Demand</b></li> <li>- <b>Crisis</b></li> <li>- Information Flow</li> <li>- Inertia</li> <li>- <b>Profit oriented</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Image</b></li> <li>- Collaboration (Aid Goals)</li> <li>- <b>Commercial Sector</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Disaster Environment</b></li> <li>- Uncertainty</li> <li>- Politics</li> <li>- <b>Logistics Appreciation</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Globalization</b></li> <li>- <b>Alliances</b></li> <li>- Governments</li> <li>- <b>Logistics required</b></li> <li>- <b>Knowledge</b></li> <li>- <b>Humanitarian sector</b></li> </ul>

Table 5. SWOT Analysis Summary where the factors cross-sector related have been identified by bold type. Source: Own elaboration.

Looking at Table 5, it is easier to see the links between sectors and the opportunity that both of them represent to the other one.

One of the weaknesses of commercial supply chain is the low adaptability and low agility of its performances; however, these are exactly the skills that humanitarian supply chain has developed due to its necessity of flexibility. By the collaboration of the humanitarian organizations, the companies can improve their skills and reduce this weakness.

On the other hand, while the humanitarian organizations are not recognized as too efficient, the commercial ones are a reference of cost reduction and speed, due to its technology and infrastructure. By the collaboration of companies, the humanitarian agencies could develop more efficient programs learning from commercial experience

or even sharing their infrastructure if they allow them. The same happens with the Information Technology and environment sustainability.

The demand dependency is one of the risks of commercial supply chain, especially during a crisis period, when this can fall down. In addition, the necessity of these companies to look for benefits, because is the only way they can survive, does not help to improve their image (and increase their sales). However, the humanitarian organizations have a good image and could add publicity to commercial stakeholders. For this reason, become closer to the humanitarian sector can report a better image for the companies and a competitive advantage against their rivals.

The humanitarian logistics sector is not empty of risks either, the low appreciation of logistics by donors or agencies' managers means less investments in this important department. The commercial sector knows its relevancy and could promote the humanitarian logistics development.

These analysis' appreciations are ratified also by the results of a survey made to a sample group of 30 students [see Chapter 8].

Finally, looking at the importance of the high uncertainty in humanitarian logistics sector and the human or natural hazards that affect also the commercial supply chain, it is highly recommended the development of proper risk management programs where the common collaboration between sectors can also improve the results. [See Chapter 7]

For these reasons, it is possible to ensure that the establishment of relationships between both sectors, commercial and humanitarian, allows the use of their strengths to take advantage of their opportunities reducing the weakness of the other sector and helping to manage its risks.

In the next chapter, it will be explained more in detail the opportunities of collaboration for both sectors and what benefits can be earned by each one implementing these relationship strategies. [See Chapters 5 and 6]

## 5. Developing Relationships between Organizations

### 5.1. General Approach

Svendsen (1998), citing Litz (1996), says that “to the extent the firm is able to recognize its interdependence, reflect upon the ethical standards appropriate to the situation, and react in a timely and responsive manner, it possesses a valuable, rare and non substitutable strategic resource.” The own Svendsen (1998) explains that an integrated company-wide approach to make possible stronger relationships between stakeholders has important advantages like the increasing of effectiveness and efficiency of the operations and the availability of use synergies.

The supply chain integration forms part of the commercial sector already. As Tai et al. (2007) explain, the relationships with stakeholders are a main goal in this theme. Citing Narasimhan and Jayaram (1998), Tai et al. (2007), difference between supplier, strategic and consumer integration, and adds that “the more completed and sophisticated supply chain integration is, the greater the improvement in supply chain performance”. According with this classification, the humanitarian and commercial integration could be watched as a strategic integration from the perspective of the commercial supply chain, and, in the best case, as part of the three fields from the perspective of the humanitarian sector (Tai et al. 2007).

From the survey of Fawcett and Magnan (2002), Tai et al. (2007) realize that the collaboration between stakeholders has been commonly relegated just to the relationships with the first-tier members and the focal manufacturer. The result of this is a limited and poor performance of the supply chain due to a lack of synchronization along the whole chain.

Wagner (2003) explains that one of the reasons of this poor integration is the amount of investment required. Organizations have limited resources and they have to manage them carefully, when the whole integration is not possible, it is important to select the most interesting partners to improve the relationships; even when the results are not going to be the same that with an unlimited implementation, the idea is to optimize the available resources (Tai et al. 2007).

Supply chain integration is not the only concept related with the collaborations within supply chain, for example the “supply chain reengineering” is defined by Humphreys et al. (2001) as “the process of transforming and synchronizing supply chain activities between groups of organizations along a traditional value chain to increase channel efficiency and effectiveness”. The synchronization is another inter-organizational factor

because has to be developed with the participation of all the stakeholders. (see Ham and Johnston 2007)

Ham and Johnston (2007) mention other examples of initiatives of inter-organizational supply chain management (IOSCM) like the just-in-time method, efficient consumer response (ECR), or the recent collaborative planning forecasting and replenishment (CPFR).

Ham and Johnston (2007) also explain a model of IOSCM initiatives adoption where three major constructs have been identified. These constructs, are: [133]

SC integration: the pattern of interdependence between the information systems, policies, and activities of a given firm on those of another firm.

Inter-organizational structure: the pattern of interactivity between organizational units required to support interdependent activities.

Relational intimacy: the pattern of mutuality in the relationships between participating organizations.

As can be seen in Figure 23, the model shows the three main requirements for the successful implementation of the IOSCM initiative connected forming a cycle. The cycle reflects the interconnection between constructs and also the possibility of a continuous improvement of the process because the end of one cycle can support the start of another one.

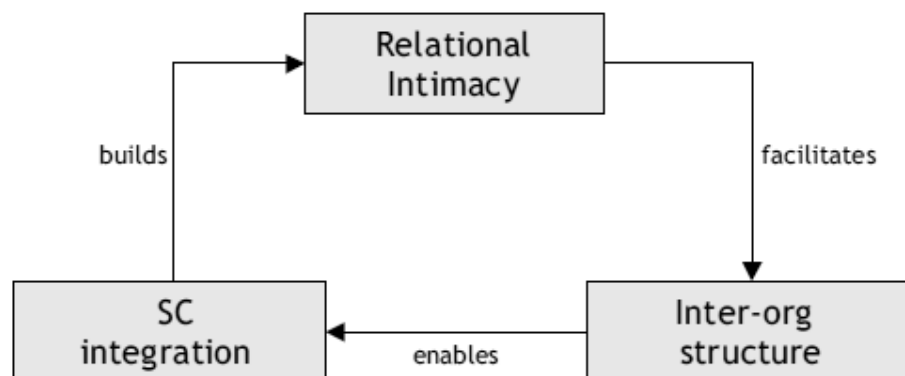


Figure 23. Conceptual model of IOSCM initiatives adoption. Source: Ham and Johnston (2007).

Other authors, as Porter cited by Tomasini and Van Wassenhove (2009), also affirm that “corporations can enhance their competitiveness by engaging in partnerships where social and economic values overlap”.

However then, why are not these methods the basic performance of the companies nowadays? The reason is that even knowing the benefits of these supply chain synchronization and collaboration activities, as explain Crum and Palmatier (2004), the difficulties for implement them and obtain the results expected make many companies to delay their development.

Thinking that the investment in this implementation is necessary, without forget the importance of a previous analysis of the opportunities, the next points will show the benefits of increase the collaboration between the humanitarian agencies and the commercial companies. The integration of both sectors was shown earlier as an opportunity for both sides and has to be kept in mind by the managers and logistics responsible of the commercial and humanitarian supply chain due to the theoretical, and demonstrated with examples, positive results of its implementation [see point 4.3].

## **5.2. Commercial/Humanitarian SC Relationships**

Murray (2004), cited by Maon et al. (2009), affirms that although the disaster relief and traditional commercial operations have their own characteristics, both sectors can learn from the other, especially developing their relationships and interactions.

Tomasini and Van Wassenhove (2009) assure that the reasons for the boom in cross-sector partnerships are obvious; on the one hand the humanitarian organizations recognize that the private sector can help with resources and expertise and on the other hand the private sector is more interested every day in the development of its CSR. However the opportunities that this relationship opens are much more.

As Maon et al. (2009) explain, “The relationships and interactions between corporations and disaster relief agencies can provide the foundation for potential win-win situations.”

### **5.2.1. Commercial Sector and its Perspective of Relationship**

Bhattacharya et al. cited by Sabbaghi and Vaidyanathan (2007), enunciated the Supply Opportunity Analysis Technique (SOAT) that moves from a reactive to a proactive model taking in account the perspective of suppliers. Christopher and Tatham (2011) also reflect this trend; they affirm that the organizations started a transition from forecast-driven approach to an event- or demand-driven one. One of the examples could be the development of the decoupling of material flow depending on the necessities, with a demand order upstream to reduce cost or downstream to allow a fast final customization.

Sabbaghi and Vaidyanathan (2007) explain that the need of share operations by the companies comes from the higher complexity of the new products and the resources required for their development and manufacturing. Burt et al. (2003) affirm that what started as partnerships between suppliers and customer firms, are now collaborative relationships or strategic alliances. These alliances are which enable the information flow across the whole supply chain (Burt et al. 2003).

Nowadays, the corporations have realized that the speed and cost reduction they have obtained through their actual methods are necessary but not enough for the future. Now they need a competitive and sustainable advantage to differentiate them from their rivals, and the humanitarian supply chain can help them to achieve it. (Tomasini and Van Wassenhove 2009)

Tomasini and Van Wassenhove (2009), citing Lee (2004), add that this advantage comes only when the supply chain is also agile, adaptable, and aligned. This was enunciated as the Triple-A supply chain. The factors involved are defined by Lee (2004) as:

**Agility:** It is the skill of respond quickly to unexpected changes in supply or demand. The agile companies can handle external disruptions without affect severally the cost of the operations and can recover fast from events like natural disasters, technological problems, etc. Tomasini and Van Wassenhove (2009) see this characteristic in humanitarian supply chain due to the short tome cycles of this chain, the uncertainty of the demand and external factors like political, financial or physical place.

**Adaptability:** It is the ability of evolve with the time developments like the economic progress, new technologies, demand trends, etc. Tomasini and Van Wassenhove (2009) explain that, as disasters produce continues structural and physical changes within societies, developments are required for rehabilitation. So, again, humanitarian supply chains are designed to be adaptable to their environments.

**Alignment:** the objective of this one is to create incentives to the members of the supply chain to improve the whole chain. In this case, as Tomasini and Van Wassenhove (2009) also affirm, the commercial sector has more to teach to the humanitarian supply chain because the flow of information sharing (core factor of alignment) is more developed by the private organizations.

As it has been shown with the triple-A supply chain, the humanitarian organizations can be taken as a reference in terms of agility and adaptability however there are more reasons from the commercial perspective supporting the idea of improve their relationships with the disaster relief agencies. As Maon et al. (2009) affirm, some specific industries, like delivery companies or that ones which operate in uncertain environments, can obtain more benefits with an efficient implementation of the actual

relief efforts improving the transit hubs in disaster areas or increasing the speed of recovery.

In addition, Maon et al. (2009) also explain that as disasters can affect the productivity and the economy of the society, the commercial sector could contribute to disaster preparedness in order to minimize the impact of these situations in its chain.

Other benefits shown by these authors are: developing local markets, improving the risk management, motivate employees and obtain a good reputation and image due to the CSR attitude (Maon et al. 2009); without forget, as G. Kovács (2011) reflects, the opportunity of an industry that is booming (the humanitarian one) with products designed ad hoc for it (like pharmaceutical and packaging solutions).

### **5.2.2. Humanitarian Sector and its Perspective of Relationship**

The humanitarian supply chain has been developed recently really fast, being recognized internationally even with different prizes. Tatham and Hughes (2011) mention IFRC as the winner in 2006 of the European Supply Chain Excellence Award. IFRC obtained the prize due to its appeal coverage, speed of goods in the supply network, financial efficiency and assessment accuracy. These prizes help to the visibility of the winners and can be used as a factor of quality.

The awards were launched in 1997 as an initiative to recognize and reward organizations in Europe that demonstrate excellence in their supply chain operations and to provide a networking opportunity for Europe's senior supply chain professionals. (ESCE 2011)

It is important to see humanitarian agencies winning this prize, that also obtained Nokia in 2008 or BASF in 2011, because reflect the importance of a sector that starts to be considered also by the commercial supply chain professionals.

Goentzel and Spens (2011) explain some innovative approaches within the humanitarian supply chain. One of them are the relationships with government agencies in order to obtain some baseline logistics information because, for the NGOs, it is difficult to map out supply chain places globally; and cite the example of the Logistics Capacity Assessments of UN Logistic Center. (Goentzel and Spens 2011)

The same authors also add that integration upstream in the chain can improve severally the buffer capacity and response scalability of these organizations, without forget the importance of the information flow for the inventory management. To improve this flow, all NGOs should be involved and open source efforts for develop the IT that make it possible. (Goentzel and Spens 2011)

Moore and Taylor (2011) explain the necessity of efficiency and effectiveness. This necessity, which appears also in commercial organizations, is important in the humanitarian environment too. In this case, the expenditure of funds provided by private

individuals or public institutions is subject to scrutiny from donors, general public and media. It means that other effort required could be the integration across the organizational boundaries, of the aid agencies, of the financial and material donations to order them and obtain an optimum effectiveness of their management. (Moore and Taylor 2011)

OxfamGB funded in 1942 was used by Blansjaar and Van der Horwe (2011) to show an example of global expansion of a NGO. In 1980s the organization started to reach out to similar organizations around the world to form an international confederation that in 1995 was named as Oxfam International (with 14 national affiliates). As happens in the commercial sector, the expansion of this NGO meant more opportunities of operation due to a higher amount of funds, more visibility, economies of scale, more negotiation power with suppliers, etc. (Blansjaar and Van der Horwe 2011)

However, Kovács (2011) affirm that “the focus is moving, from humanitarian organizations and global logistics service provider, on to cross-learning and also to their local rather than global dimension”. As the same author explains, the local partnerships are complementary with the global ones being both necessary.

The local perspective make the agencies focus also in the development of local companies and staff instead of import from abroad (even if it does not exist a cost reduction, as the answers to the interviews made for this work confirmed) due to the knowledge of them about the necessities of the people living in the zone. (Larsson 2011)

Dowty (2011) mentions some advantages of prioritize the local knowledge as could be the identification of primary funds used by the beneficiaries, the ability of navigation in a well-known environment and the importance of them for establish a firm basis for trusting relationships. Those aspects are also interesting for the commercial sector in less developed markets.

Moore and Taylor (2011) citing Tomasini and Van Wassenhove reflect that IFRC recognized that its supply chain would be improved by capitalizing the knowledge possessed by the staff of the whole Red Cross movement. For this challenge, the information flow is, again, a core factor and IT the tools to develop for achieve it.

Blansjaar and Van der Horwe (2011) explain other opportunities that the IT offers for humanitarian logistics: improve the visibility of the activities, reduce operating costs and lead times, more accurate management information, or operational prioritization and resolution of bottle necks. The commercial sector could be again the best partner for this factor due to the experience that they have managing IT and the modern technologies they already use.

Kovács (2011) explains that, for the most recent humanitarian programs, one of the goals is the establishment of a joint global hub system that includes inter-agency warehousing. He also reminds that the design, packaging standardization and



modularization of the products, something that would facilitate joint/shared transportation, have to be implemented in humanitarian practice and research.

To focus the sector on these challenges, since the tsunami of 2004, it is being developed the implementation of the cluster approach where the relationships between disaster relief companies is clearer and facilitates the coordination in the field. Christopher and Tatham (2011) affirm that the post-tsunami challenges could be mitigated through the application of some tools and techniques already used in the commercial sector with good results.

Masella and Rangone (2000), keep the attention about the positive impact on strategic purchasing that has the involvement of partners. They also explain that the development of the purchasing strategies could increase the benefits for the financial performance.

Related with that, from the interviews made for this work, it can be extracted the trust in relationships between different humanitarian organizations to allow the biggest ones to orchestrate the negotiations with suppliers. The orchestration is already used in the commercial sector, being an example the company Li and Fung.

Zacharia et al. (2011) explain that “the orchestration implies that the supply chain is governed by an aggregate player whose role is to provide the services and assume control of a part of the supply network”. Through this process, the orchestrator can improve the organization of the networks, the information shared and managing assets although reduce the inventory. (Zacharia et al. 2011)

It exist a simultaneous work with multiple supply chain partners, they can standardize data and processes across firms and provide by this way better supply chain visibility for the whole chain (Zacharia et al. 2011). In addition, as the interviews showed, the number of organization demanding services could be reduced just to the biggest agencies by the orchestration; this allows the biggest agencies to use their negotiation power to obtain better prices reducing costs for the sector.

There are some factors announced by Zacharia et al. (2011) to keep in mind when we talk about orchestration:

1. The higher the degree of standardization provided, the greater the value creation.
2. Standardization will positively impact visibility of the orchestrator
3. The higher the degree of visibility provided, the greater the value creation.
4. Visibility will positively impact neutral arbitration of the orchestrator.
5. The greater the degree of neutral arbitration provided by the orchestrator, the greater value creation.
6. Neutral arbitration will positively impact collaboration of the orchestrator.
7. The greater the degree of collaboration, the greater the value creation.

One of the discussions in the humanitarian sector is “who are the customers?” Tatham and Hughes (2011) ask if “those affected by a disaster can, from a logistic perspective, be seen as the final customers of a complex supply network that is frequently created in haste under extreme situations.” However, Kovács (2011) thinks that the beneficiaries lack traditional purchasing power so, could they continue being considered customers? Kovács (2011) also adds if a donor should be seen as a supplier or a customer that needs to be satisfied.

The situation has a complex analysis; however it could be approached to a well known business model in the commercial sector: the TV channels (also radio ones or even some web pages). The spectators of a TV channel have more power than the beneficiaries of the humanitarian operations and can choose between a bigger offer, but they cannot be considered “customers” because they are not buying the services of the channel, actually the ones that are doing it are the companies that want to be announced during the publicity of the programs emitted by the channel (there are different modalities within this sector, but this is true at least for some of them).

When the programs of the channel have high levels of audience, the visibility of the channel increases and, with it, the interest of the companies for buy publicity and earn, by this way, part of the visibility that the channel has (similar to the interest of the companies that donate in the humanitarian sector).

According to this interpretation, the humanitarian agencies could use also some of the strategies of this sector to increase their visibility, as more interaction between the individual donors and the activities of the agency or exploit the social media. Without forget that the nature of the humanitarian organizations is special and their activities have to continue following their humanitarian principles.

Van Wassenhove (2006) affirms that recently some researchers start to apply techniques used in the corporate sector to increase the efficiency of logistics operations in humanitarian supply chain. For example, Tomasini and Van Wassenhove (2009) explain that the industries that compete on the basis of speed have a total lead time (the elapsed time to complete a business process) that represents the 3–5 percent of value adding time. It means that it continues existing possibilities of improvement, and this possibility is even higher in the humanitarian sector, where the supply chain operations are less developed than in the private one.

To conclude, as Maon et al. (2009) explain, from a disaster relief agency perspective, the collaboration with corporate organizations could provide not only material and financial support but also exposure to SCM, innovations, and cost efficiency capabilities and operations. Various SCM-related tools and concepts from the commercial enterprises could also be useful for the disaster relief sector as well if these tools and concepts are carefully implemented and the special characteristics of disaster relief operations are taking into account. (Maon et al. 2009)

### 5.2.3. Different Ways of Cross Sector Relationships

First of all, it is necessary to distinguish the different levels of commitment between organizations that can be considered when an organization is thinking about establish relationships with other one.

Ham and Johnston (2007), as can be seen in Table 6, catalogued these different degrees of mutuality in four groups: Networking, Coordination, Cooperation and Collaboration.

<b>Networking</b>	<b>Coordination</b>	<b>Cooperation</b>	<b>Collaboration</b>
Exchanging information for mutual benefit	Exchanging information for mutual benefit and altering activities for a common purpose	Exchanging information, altering activities, and sharing resources for mutual benefit and to achieve a common purpose	Exchanging information, altering activities, sharing resources, and a willingness to enhance the capacity of another for mutual benefit and a common purpose

Table 6. Different levels of commitment in IOSCM initiatives. Source: Ham and Johnston (2007).

Ham and Johnston (2007) defined the groups as:

**Networking:** based on information sharing. One example of this way of relationship could be the implementation of industrial standards, something that does not require an important integration between organizations.

**Coordination:** adds, to the networking definition, the possible alteration of previous independent activities looking for a common purpose.

**Cooperation:** increase the commitment of the coordination adding the sharing of resources. This relationship could be considered tactic or strategic depending on how long is going to be the project.

**Collaboration:** implies already the intention of enhance the capacity of the other organization that is part of the relationship. This is the higher level of commitment and it means the integration of systems, planning or business development divisions. It is related with strategic partnerships.

The Ham and Johnston's cataloguing was enunciated for the commercial sector, however, Maon et al. (2009) proposed a model to catalogue the contributions of companies to SCM in the humanitarian sector and make easier their study. As Maon et al. (2009) explain, the collaboration can achieve better results with more adequate and innovative solutions to the challenges that appear in the case of most disaster relief agencies. According with this idea, the model proposed by these authors start from three strategic angles inherent in cross-sector relationships in disaster relief operations:

1. Financial perspective.
2. Capability perspective.
3. Entanglement perspective.

These perspectives are useful to study the collaboration flow from the commercial sector to the humanitarian one. This flow could be the most important due to the more maturity that commercial sector shows comparing with the humanitarian logistics (Maon et al. 2009). However there are other models, like the one of Tomasini and Van Wassenhove (2009), which differentiates the collaboration between:

1. During disasters
2. Between disasters

And, as an extension of this one, key assets movements during the crisis (food, medicines, or even the equipment for operate a telecommunication network) or back-office support for better preparedness in case of disaster (for example transferring the knowledge accumulated by the commercial sector about alignment). (Tomasini and Van Wassenhove 2009)

It is important that the image of humanitarian agencies is always in the forefront of their operations to avoid possible misunderstandings (Tomasini and Van Wassenhove 2009). Even when, during an emergency relief operation, private sector can assists the humanitarian agencies with, airplanes, warehouses, telecommunications equipment and different skills, an excess of commercial visibility could damage the humanitarian principles of the agency.

Now, the previous models will be mixed to explain the collaboration flow between the commercial and humanitarian sector, taking in account the moment when this collaboration is being produced.

#### **5.2.3.1. Financial Perspective**

Tomassini and Van Wassenhove (2009) consider that "cash is still the most important, and often the most appropriate, donation for humanitarian relief and recovery efforts, enabling humanitarian agencies to purchase essential goods and services upfront, mainly relief supplies and transportation."

Logistics expenses in the humanitarian sector were estimated in 60% (if we follow the data showed by Blansjaar) or 80% (looking at Van Wassenhove information) of the total expenditure of aid agencies. Both percentages are really high independently of the variations between them, and it means that a high amount of money is involved in this field; around 12-15 billion \$ of 20 billion \$ that this sector can move every year. (Christopher and Tatham 2011)

As Maon et al. (2009), citing Holland (2007), explain, during the disasters, the cash donations and essential goods and services are offered by many corporations. One of the reasons why, at least until now, private companies support the humanitarian sector is the publicity and good image for the company that these operations can report them. As the media is more interested in a disaster happening at the moment than in long-term projects, the funds for preparedness (between disasters) are lower than the ones for disaster response.



Figure 24. Advertisement about the necessity of cash in the humanitarian sector. Source: Future of Aid (2012)

Tomasini and Van Wassenhove (2009) advert about the problems that unsolicited donations can cause, as bottlenecks, because the management of this donations rest time for other ones, or even extra costs of warehousing and transportation.

However, one of the special weaknesses of the humanitarian agencies (related with the financial perspective) is to find funds for the period between disasters (the recovery and prevention phases cited in the disaster management cycle). One way to solve relatively this inconvenient is increasing the visibility of the recovery and prevention projects, if not by general media networks, at least by the communication tools of the humanitarian agencies (magazines, social networks, advertisements, etc.); according to the interviews made for this work, FRC studies the best way to announce the different donations received from companies like Nokia, by this way, the company obtains the publicity and the agency the funds.

The recovery and prevention phases are the most important ones to obtain a better efficiency in the sector, because, as Jorge Olague (donor relations officer at the WFP affirms in Rowling (2007) cited by Maon et al. (2009), "any dollar given before an emergency goes much further than more dollars given after." These authors also cite Ibarrarán et al. (2007) for explain that the private sector could be even more sensitive with these phases because they can value better the meaning of "secondary costs" for non-expert donors like the costs of logistics, training, measurement, etc. and are the best opportunity for the humanitarian sector to improve the efficiency of its supply chains. (Maon et al. 2009)

After see how the financial flow works from the commercial sector to the humanitarian one, it is time to understand the flow from the disaster relief agencies to the private companies. This one is not as bigger as the other case but it continues being an opportunity of business for the commercial organizations.

Between disasters, the humanitarian agencies try to make contracts with local companies, because of their experience in the field and also to support the development of the zone. These long-term projects are more cost efficient than the emergency operations and also international participation can be involved.

The demand of products by the humanitarian industry is also increasing; not only are interested in specific products that requires a special design (taking into account the needs of transportation, field distribution and utility of the products), the interest is also for standard products. For example, in 2005 the demand of mosquito nets was bigger than the offer (Tomasini and Van Wassenhove 2009). These kinds of data have to make the commercial sector react and think in the humanitarian industry as the opportunity of business that it is already (especially nowadays, with the situation of economic crisis, when other markets cannot maintain their demand).

During disaster, and due to the goods donations and the stock buffered in different warehouses around the world, the main necessity is the transportation service. At this point, some companies can take advantage of the less experienced humanitarian organizations increasing the prices due to the huge demand that create these events. Even when the biggest disaster relief agencies negotiate the contracts, the emergency response is more expensive than a normal long-term project because they need to be fast and the environment is more challenging than a more stable one.

#### **5.2.3.2. Capability Perspective**

Tomasini and Van Wassenhove (2009) affirm that "humanitarian organizations, which at one time regarded cash as the only useful form of corporate giving, are now recognizing that businesses have more to offer in terms of resources, expertise, and technology."

Moore and Taylor (2011) cite Whiting (2010) explaining that systemic inefficiencies have degraded organizational effectiveness in humanitarian sector, increasing times to arrive to the disaster area or making more difficult the distribution management once there (as happened in 2004 after the tsunami or in 2010 after Haiti's earthquake).

Fritz Institute (2008) explains that effective disaster relief organizations need to define and share "best practices" as effective processes, appropriate uses of new technologies, well-trained logistics employees, objective performance metrics with the appropriate indicators, or institutionalised learning. By this way, and keeping in mind the partnerships, the humanitarian organizations can mitigate each community's vulnerability.

Maon et al. (2009) affirm that, collaborating with the humanitarian sector, private organizations can teach them how to use SCM to obtain more efficient results and share their technology skills. The way to achieve these goals is the medium-term partnership that also allows the commercial companies to obtain a reputation through their CSR strategy.

Such kind of partnerships can offer access to corporate infrastructures, like warehouses or communication networks, and co-developed processes that help reduce response times and costs substantially. They can establish agreements with the suppliers of the humanitarian agencies, create standard catalogues that facilitate accurate communications of orders from the field, and standardised measurements specifically developed for the humanitarian performance that can give the idea of efficiency and value of the SCM activities in this sector. (Maon et al. 2009)

Again, the humanitarian industry also can offer its knowledge to the commercial sector by trainings. It could be implemented a volunteer program where the employees of the company can learn leadership skills by collaborating on the operations field of the humanitarian agencies. The most interesting training projects are the long term ones, where the emergency is lower and the skills of the volunteers are not proved under special stress environment. In addition, the employees could be motivated through humanitarian activities helping other people (covering the higher levels of its own Maslow's pyramid).



Figure 25. Emergency Simulation during the Logistics Cluster's Logistics Response Team training. Source: Logcluster (2012)

From the interviews made for this work it is explained that people who learned how to manage themselves in a challenging field can apply their knowledge to manage also future risk situations, in the same way the experience that the employees can acquire in a “humanitarian internship” managing less developed supply chains would allow them to face disaster environments that also affect the commercial sector (like natural disasters, terrorism, etc.).

This perspective is, again, more useful when it is applied in the period between disasters, where the investments are for preparedness.

### **5.2.3.3. Entanglement Perspective**

The entanglement perspective is that one where corporations may commit their SCM knowledge, skills, and resources for a long-term strategy. They engage comprehensively and persistently with the humanitarian sector. Due to the specialization of the knowledge required for these relationships, the stronger business commitment and leadership to develop disaster relief SCM-related capacities should come from business sectors most closely linked to the own SCM, logistics, or IT issues. (Maon et al. 2009)

This three-angle model illustrates how such cross-sector collaborations can enhance SCM practices in the disaster relief sector and also in the commercial one. It is important remind that when the relationship between companies and disaster relief agencies is focused on long-term periods, the selection of the partners, and the common objectives, has to be clear. It cannot be like the case of donation, that is something punctual and just for obtain some publicity; in this case the decision is part of the strategy of the organizations and has to be analyzed like that [see chapter 6].



## 6. The Partnership as Commercial-Humanitarian Relationship Option

As Larsson (2011) explains, citing Harvey et al. (2010), nowadays there is a growing focus on partnerships as a factor of risk reduction also in disaster reliefs. The risk management will be exposed briefly in the next chapter [see Chapter 7], however due to the importance of the topic and the previous citations in this work, it is necessary to stop and analyze the complex decision of partnership as an example of collaboration within the commercial world and also in the humanitarian one.

Tatham and Hughes (2011) think that the efficiency or even the success of a company depends on the capacity of this company to extend beyond traditional corporate boundaries by working with partner relationships. Tatham and Hughes (2011) cite Muskin (2000) defining the partnership as a business relationship based on mutual trust and openness where companies share risks and rewards with the objective of achieve a profit or an advantage.

### 6.1. Arguments for Developing Partnership Relationships

Some arguments for implement a partnership are given by the own industry situation. As Sabbaghi and Vaidyanathan (2007) reflect, based on the idea of Rota et al. (2002), nowadays the products and services are becoming more and more complex due to a more specialized demand. This complexity increases the costs of product/service development and delivery times.

Sabbaghi and Vaidyanathan (2007) shows the partnership between organizations as a way for reduce these costs and lead times by sharing resources and focusing the activities of the companies in the specialties of each one. Citing Masella and Rangone (2000), Sabbaghi and Vaidyanathan (2007) add that the partnership has a positive impact on strategic purchasing, and it is reflected also as positive for companies' financial performance.

Van Wassenhove et al. (2008) identified five main arguments for the partnership between companies and humanitarian organizations attending the commercial point of view:

*Enhancing a company's external reputation:* For example by the good publicity that the humanitarian activities can generate. The partnership with a reputable NGO, according to Van Wassenhove et al. (2008), is a relatively low-risk way to achieve the goal of a better external image of the company.

*Uniting employees around a common cause:* it can rise up the morale of the employees. Can be increased also the motivation and loyalty of the employees to the company and the job that they are doing.

*Increasing sales and customer loyalty:* it is the main idea that supports also the creation of other different CSR programs. With a partnership between the company and a NGO, the CSR of the company acquires more visibility and the customers can recognize easily this factor.

*Identifying possible business opportunities in areas that would otherwise be hard to access:* it cannot be forgotten the globalization of the commercial sector. The partnership between national and international organizations with the commercial companies is an opportunity of learn and understand the necessities of different cultures allowing most effective and efficient activities.

*Encouraging growth and investment:* The development of the disaster's place and region is another of the interests of the companies due to the economic possibilities of a zone completely recovered.

Richardson and Price (2011) reflect other advantages of partnership from the humanitarian sector's point of view as:

*Better level of service:* increasing the capacity of the organizations to support their activities.

*Exchange of ideas, knowledge and expertise:* allowing the design of more effective programs for emergency response.

*Influencing decision makers:* facilitating the accessibility to those people that can affect the project due to economic or politic factors.

*Solidarity and professional support:* keeping in mind local and smaller organizations without the experience or resources required for the different emergencies.

*Information sharing:* increasing the information flow, one of the critical factors for every supply chain.

*Government and civil society implication:* especially with public partnerships where the politics show their commitment with the projects and help to increase the awareness of the society about the possible emergencies.

The cross-sector collaboration, particularly by a partnership relationship, has a lot of arguments for be adopted, as could be seen earlier [see chapter 5] or with the lists cited. But it is important to remark now the difficulties that appears for the implementation of this strategy.

## 6.2. Potential Difficulties Related with Partnerships

There are several challenges for achieve all the benefits from partnerships that have been exposed earlier. However, also exist techniques and advices that can mitigate, if not avoid, these difficulties.

Lin and Paterson (2007) catalogue the challenges in three groups: control and supervision of work, awareness and coordination of the efforts, and trust and collaboration. Keeping in mind the special characteristics of a cross-sector partnership, it is necessary to add, as already explained Tomasini and Van Wassenhove (2009), the cultural differences as another group for its study.

### *Control and supervision work:*

The partnership, as a long-term relationship, needs to be controlled and supervised for ensure the correct performance of the collaboration. However, as Van Wassenhove (2008) explain, the corporate-humanitarian partnerships need time and effort for their development (around 18 months, estimated by these authors) and the resources of the NGOs, usually lower than the ones of the companies, cannot allow the maintenance of some partnerships.

For example, while a company often has one or more people for the CSR projects, it is common that the humanitarian organizations do not have any specialized staff for this area (Van Wassenhove 2008). This lack of resources implies a lower control by the humanitarian organizations and more responsibility for the corporations if they are really interested in the achievement of the objectives.

The most common way for control and supervision the process are the measurements and the objectives based on these ones. This was shown already as one of the less developed factors in the humanitarian sector and it has to keep in mind when a commercial company is thinking about how to measure the effectiveness of the partnership [see points 3.2.3 and 4.2.1].

### *Solution:*

In order to reduce this risk, as Tomasini and Van Wassenhove (2009) explain, it is necessary to develop indicators that could be able to measure the progress of the relationship. Without forget the continuous improvement allowed by this kind of collaborations (as it was reflected in Figure 23) and its requirements of effort from both partners.

About the poor resources of the humanitarian organizations for the area of partnerships, one possibility is the aid from the company. If the partnership is a way to help the NGOs, to assign an employee who helps the organization sharing its knowledge can be an important help. At the same time, the employees will acquire new knowledge due to

the experience that could be learned on a special environment like the one around the humanitarian relief agencies.

#### Awareness and coordination of the efforts:

To manage a cross-field partnership is not easy. The objectives of the partnership could be not clear and nowadays a project based just in good intentions is not enough, for all the projects it is required effectiveness and efficiency thinking in the results.

Tomasini and Van Wassenhove (2009) add as a problem the roles of the partners during the collaboration; if they are not well defined since the beginning the coordination could be impossible. Other drawbacks reflected by Tomasini and Van Wassenhove (2009) are the absorptive capacity of the partners and the lack of transparency.

Richardson and Price (2011) also advice the inconvenience of a strong difference between responsibilities of each partner. As it happens with some donors, who contribute with more resources want manage them even when their knowledge is lower than others' one. However, the humanitarian organizations cannot avoid their responsibilities either; to wait until someone, with more capacity, solves their problems is not a solution.

#### Solution:

It is necessary to establish the priorities and objectives of the partnership since the very beginning. It does not mean an invariable system but, at least, a clear one. What each partner expects, or the necessities identified for the project, are other two points to keep in mind before starting the common activities. (Tomasini and Van Wassenhove 2009)

The roles and responsibilities have to be determined by the skills of each partner. By this way, it can be obtained an increment of the efficiency due to the specialization of the areas. Tomasini and Van Wassenhove (2009) explain the importance of avoid the behaviour of "try to do the most at every point" instead of focus just on the areas where each partner can have a higher impact from its contribution.

To reduce the risk of unexpected changes in the acceptance of the main points of the partnership, it is always important to have engagement rules, where could be exposed the guidelines of the collaboration Tomasini and Van Wassenhove (2009).

Finally, a critical factor for achieve a good coordination is the information flow. As Lin and Paterson (2007) explain, the partnership allows the flow of a bigger amount of information but also needs better information sharing to achieve an efficient coordination. Considering the information sharing as a cornerstone of the partnership, the awareness and coordination risks will be lower.

### Trust and collaboration:

As Lin and Paterson (2007) reflect, the trust is one of the most important barriers when a partnership has to be formed or even for the effective work developed by this collaboration. It affects directly to the information flow mentioned earlier.

Tomasini and Van Wassenhove (2009) show some reasons for explain the lack of trust that could appear in these situations. One is the uncertainty of these processes, how much is the benefit and how much the costs produced directly or indirectly due to the partnership (time, adaptability, coordination...). Other reason identified by these authors is the idea that the knowledge is power and to share it makes the company weaker.

Lin and Paterson (2007), citing Pollock and Cornford (2004), identify the problem as the difficulty of stop thinking about the partner as “them” and start to think as “us”. Tai et al. (2007) explain that just when the integration between organizations is complete the benefits of the relationship can be maximized; it means that all the factors that rest unity and continue consider the independency of the partners also rest opportunities to the collaboration.

As it was shown earlier, the global integration of the organizations it is not necessary the main objective of the collaboration between them, it depends on the grade of commitment that each part wants develop. It cannot be forgotten that a higher grade of commitment do not increase only the opportunities of maximize benefits, also increase the responsibilities and risks. [See point 5.1]

### Solution:

It has to be developed the culture of sharing between the partners for ensure the information flow, that is going to be the origin of improvements in the performance of both organizations. To achieve it, Tomasini and Van Wassenhove (2009) explain the importance of recognize the multiple benefits of a learning process (especially in a cross-sector partnership) and the necessity of be open minded for keep the positive outcomes that maybe were not expected.

The engagement rules for guarantee a correct coordination between organizations, could allow also an increment of trust between them. They will delimit the level of commitment of the parts and the responsibilities of each one. It is easier and strongly recommended to trust in a contract instead of just in good words.

Finally, recognize the importance of the managers' commitment. The higher levels of the organization are the first ones that have to support the strategic decision. Just when they reflect this support, the lower levels will believe it and can start to change also their mind. For example, if a company decides to share human resources with a NGO, the employee has to be sure that its work with the NGO will be valuated also by its own company.

### Cultural differences:

If the relationships in a partnership, where both partners are from the same sector, are difficult, when the sectors are as different as the commercial and the humanitarian one, the culture of each organization is an especially relevant factor to keep in mind.

The main difference is the objective of each organization. As it was shown when both supply chains were defined, the commercial sector is managed looking for the profit while the humanitarian one is full of “non-profit organizations” [see Chapter 3]. The bases of partnership are the mutual benefits that can be obtained for the participants; and objectives as different as the ones shown here look more difficult to achieve at the same time than when the collaboration takes place within a common sector. This reason can explain the relative low interaction between corporations and humanitarian relief agencies.

Related with this risk, it is very important the selection of the partners because the “image” is a relevant factor for the success in both sectors. An incorrect election, in the company or organization that will be working together, could finish obtaining opposite results from expected ones. Kovács (2011) explain that “a commercial supplier, in partnership with humanitarian agencies can be expected to delimit their own partners companies to those that comply with humanitarian principles.” This point has to be kept in account when the company is thinking about the partnership with a humanitarian organization.

Tomasini and Van Wassenhove (2009) also think that could be arduous relationships due to the different behaviours of each organization and the problems of understanding that can appear from both sides.

In addition, as Richardson and Price (2011) reflect, the usual high frequency of rotation in the humanitarian sector, where the members can be even just voluntaries, does not allow them to accept some responsibilities and could affect the relationship with companies.

### Solution:

In order to achieve better relations between organizations (and the members who are involved within them), all the initiatives promoting the experience sharing and inter-organizational activities could be successful. For example, Tomasini and Van Wassenhove (2009) recommend the establishment of an interface to make easier the information sharing and help the mutual understanding of incentives and priorities. Other option added by these authors is the development of ambassadors that can work as a link connecting the organizations.

Tomassini and Van Wassenhove (2009) alert also about the importance of build a common language that both partners can easily understand. It can be achieved by the establishment of standards and the unification of IT systems. Again, a higher level of integration can produce better results, but also more costs and risks.

### 6.3. Advices and Recommendations

Some advices have been shown already [see point 6.2]. However, due to its importance, it is necessary to focus on the partner selection carefully. From a survey cited by Elmuti and Kathawala (2001), and shown in Figure 26, this factor was selected for 70% of 455 CEO asked, as an essential factor for the success of a partnership.

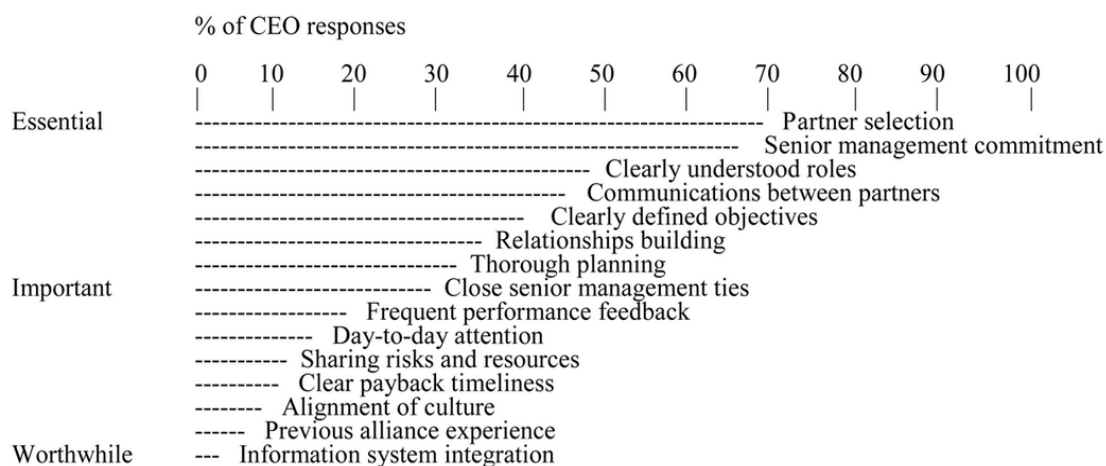


Figure 26. Result to: essential factors for the success of a partnership; from a survey of 455 CEO of electronic companies. Source: Elmuti and Kathawala (2001).

The model of 4 steps, developed by Tomasini and Van Wassenhove (2009), is a useful tool for select the correct partner.

1. *Finding a focus:* before to think in the partner, an organization has to think in itself. The kind of skills it has, the core competences, its own necessities... and its strategy. With all this factors studied, it has to be determined the way to use them. Richardson and Price (2011) recommend the companies ask themselves “What type of partnerships would strengthen your aims and capacity?” It is in this step when the company could decide to enter in the humanitarian sector collaborating with any NGO.
2. *Filtering candidates:* in this step, it is necessary to keep in mind the results of the previous one and use them as criteria for start searching partner. As Richardson and Price (2011) reflect, here could be interesting the question “What can you offer and what are you looking for in a partner?” For example, at this point a humanitarian organization can refuse the partnership with the army, as Seipel (2011) explains, due to the risk of loss neutrality (one of the humanitarian principles); even when a partnership with them could increase its capacity and resources.

3. *Candidate selection*: When the possible candidates are already filtered, the first selection, as Tomasini and Van Wassenhove (2009) explain, has to keep in mind the matching of competencies, effectiveness and the overhead costs and geographic scope. Richardson and Price (2011) add the importance of have a high level of information available about the candidates.
4. *Comparing candidates*: The last step is the comparison between the candidates selected. Tomasini and Van Wassenhove (2009) alert about the compatibility between organizations, the image and attitude of the candidates, their logistics capacity and potential opportunities. Richardson and Price (2011) recommend also the questions “Is there organizational commitment on both sides?” and “What are your mutual expectations and understanding of what the partnership will involve?”

Finally, Tomassini and Van Wassenhove (2009) recommend the development of partnerships in humanitarian sector during non-emergency situations. By this way, the case can be analyzed carefully and with enough time; and some mistakes produced by the pressure of the emergency can be avoided.

Goentzel and Spens (2011) explain that the problems related with the logistics in large-scale emergencies the last years have demonstrated the importance of the private sector for scaling-up a response, but also forced the public sector to reconsider its organizational structure.

One example is the Finnish National Emergency Supply Agency (NESA). This Agency is promoting the private-public partnerships (PPP) as a way for ensure the continuity of the supply chain during and after a disaster. The agency also published its own recommendations for partnerships, collected in its project SOPIVA (2009). Some important points are:

*Related with Contract management*

Partners, suppliers and resources critical to the organization’s production have been identified

Requirements for the implementation of operational continuity management are included in agreements

The obligation of critical operational continuity management has been extended to cover the network of key suppliers

*Related with Ensuring activities and functions during special circumstances*

Cooperation with partners to manage incidents and disruptions is organized and responsibilities are defined

All these recommendations can, and must, be taken in mind also in the case of commercial-humanitarian partnerships.



The conclusion of this point is that following the recommendations and analyzing each situation particularly, as Dannatt (2011) says, “Through an understanding of the strengths, and an acceptance of the weakness, strong working relationship can be developed”; and something even more important, this relationship can report a lot of benefits for both partners.

## **6.4. Commercial-Humanitarian Partnership Cases: TNT/WFP and DHL/UNOCHA**

### **6.4.1. TNT/WFP**

TNT Expresss is one of the biggest logistics companies in the world and also has one of the most valued SCR strategies. For four years now, its CSR programmes have earned a leadership position in the sector and in 2010 the company achieved sector leadership position in the Dow Jones Sustainability Index. (TNT 2011)

TNT Express’ commitment to corporate responsibility formally began in 2002 with its innovative partnership with WFP by the project “Moving the World”. This project lends TNT Express core skills, knowledge and resources to support WFP’s fight against world hunger.

The company explains that its knowledge of distribution and SCM puts it in a unique position to help WFP feed the hungry. By sharing knowledge and skills, TNT Express helps WFP to optimise its operations and save costs.

The company is pushing to keep the attention of the media for hunger raising awareness and funds among Express employees as well as the general public. One example of this is the annual “Walk the World” events; on May 29, 2011, more than 34,000 TNT employees were participating on it.

TNT Express also builds partnerships that will support WFP’s objectives in the long term, for instance with “Fleet Forum” in the area of road safety and with “North Star Alliance” for the well-being of truck drivers.

An Emergency Response Team (ERT) was created after the realisation that logistics support has a great importance when it comes to providing assistance during major disasters like earthquakes, floods or the 2004 tsunami, when the necessities of improve the efficiency of the humanitarian supply chain became urgent.



Figure 27. TNT supports WFP also with its delivering services. Source: WFP/Rein Skullerud (2012)

In 2010 the ERT was launched again with a new team of 41 members from all over the world who will remain in the team for 3 years. The ERT members support bilateral requests from the WFP for logistics assistance during major disasters. The ERT members also work hand in hand with the Logistics Emergency Team (LET) to provide a more consolidated assistance to the Global Logistics Cluster headed by WFP. The LET consists of Agility, AP Möller-Maersk, UPS and TNT.

All trained ERT members are on standby and can be deployed to any disaster locations around the world within 48hrs once management approval has been granted. Each member is required to complete the LET Emergency Response Training provided by the LET and WFP, this will ensure the skills of the members and will help the professionalism of the sector.

TNT and the LET have agreed on the areas of expertise that can be supported by the emergency responders. These areas are mainly:

- Airport Operations and Management

- Transport Operations and Management (Cargo Tracking Officer)

- Warehouse Operations and Management

TNT Express has also created a new role called “InfoComm Specialists” who accompany the responders when they are out in the field to document the journey or the tasks of the responders. They will be responsible for capturing good quality photos and video clips for use for both internal and external communications.

Besides deployment of emergency responders, TNT has to date sponsored more than 12 in-kind airlifts of either the High Energy Biscuits or the Plumpy SUP to many countries when requested by WFP.

Since the start of the partnership in 2002, TNT has responded to 45 emergencies, in 2010 alone to Haiti twice, and Pakistan.

Since 2002, TNT has invested €51 million in its partnership with WFP. The company reports its benefits in terms of goodwill, publicity, and the experience gained through working with WFP. Maon et al. (2009) ensure that the program “Moving the World” has generated knowledge transfers, hands-on support, and funding and awareness initiatives.

(TNT 2011)

#### **6.4.2. DHL/UNOCHA**

DHL is other example of partnership between a logistics leader company and the humanitarian sector. With about 470,000 employees in more than 220 countries and territories, Deutsche Post DHL is one of the largest employers in the world. The company signed the UN Global Compact project (“a strategic policy initiative for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labour, environment and anti-corruption” United Nations 2011) and its principles, being aware of the many challenges the world is facing today. (DHL 2011)

DHL, also explained in its own webpage, provides an ideal global network for helping people impacted by major natural disasters and its support, in cooperation with the UN, focuses on global programs in two core areas: Immediate disaster response after natural disasters and disaster preparedness. In addition, Deutsche Post DHL and its employees are contributing time and donations to deliver help to affected communities around the world.

For the immediate disaster response, DHL, working closely with UN OCHA since 2005, created a global network of Disaster Response Teams (DRT) composed by around 300 specially trained DHL employees.

The specially trained logistics experts of DHL are deployed to the airport involved to support logistical efforts such as warehousing and setting up an inventory. They ensure that essential supplies, such as food, medicine and hygiene kits, keep moving – even under the difficult circumstances related with the disaster environments.

Ready to move within 72 hours, these teams are asked to deploy by the UN OCHA. The teams form a network covering most regions of the world that are affected by natural disasters on a regular basis.

In 2010, the number and scale of deployments of DRTs were really high due to four major natural disasters: The earthquakes in Haiti and Chile, the floods and landslides in Guatemala and the severe flooding in Pakistan. The DRTs were deployed for 83 days in

2010 (compared with 44 in 2009) and handled 7,000 tonnes of relief goods (around 1,300 tonnes during 2009) by 105 DRT volunteers (31 in 2009).

DHL, as happened also with TNT, thinks that a professional preparation is the key to a successful deployment. In 2010, the company trained 143 new DRT volunteers. The training takes the volunteers through the basics of disaster relief operations, the role of the DRT and teambuilding to adequately prepare them for deployment. Participants learn how a DRT is put together in the wake of a disaster and how airport logistics management works in cooperation with the UN.

For instance, 47 volunteers took part in classroom sessions and real-life simulations in Singapore. The training took place in a remote location so conditions came close to what the volunteers might face in an actual relief operation. They lived in tents with very basic facilities and ate local diets, giving them an idea of the hard realities they might face after a major disaster has destroyed the local infrastructure. The Disaster Response induction and preparation modules are an important step in preparing DRT volunteers.



Figure 28. Group shot of the Deutsche Post DHL Disaster Response Team deployed to Haiti after the earthquake in January 2010. Source: DHL (2012)

In the case of preparedness collaboration, DHL has the program Get Airports Ready for Disaster (GARD) developed with the partnership of UNDP. This program has the goal of prepare the responsible people of regional airports to manage the storage and distribution of huge volumes of food, water, medicine or tents under disaster conditions.

Launched in 2009, the training program, GARD, is implemented in disaster-prone regions. It is a mix of in-class instruction, assessment work and on-site field work. To assure effectiveness, training is kept close to reality and is always held at the airport to be made disaster-ready. The trainees are local people selected to drive airport preparedness efforts – airport staff, government and military officials, representatives

from the UN or humanitarian agencies. They can rely on trainers from Deutsche Post DHL who have extensive experience in airport logistics and disaster response.

The several-day program is very much hands-on: It starts with a look at the existing situation – infrastructure, available people, and existing equipment – and works with it. There is no standard solution being taught as each infrastructure is different. Together with their trainers, local trainees evaluate their airport and develop a plan for optimizing capacity and resources in the event of a disaster. The goal is to increase the possible throughput of relief goods and allow smoother processes even when normal airport measures are under stress.

After the GARD training, airports can achieve and constantly build on their own relief surge capacities. The participants:

- Have a logistics contingency plan for their airport in place, which is constantly updated.

- Use the GARD assessment tools and templates to train more local staff or conduct GARD training at other airports.

- Are able to constantly evaluate their disaster-ready status.

The program GARD was already tested in 2009 at the Makassar and Palu airports in Indonesia, both located on the earthquake-prone island of Sulawesi. After training individuals and getting these two hot-spot airports disaster-ready, the program was adapted for other regions of the world.

In 2010, GARD was taken to Nepal. DHL experts worked with the UNDP, Nepal's national disaster agency and local airport authorities to prepare a total of five airports. With the aim of assist disaster relief efforts by making them more efficient and effective, DHL rolled out GARD in 2011 to airports in Bangladesh.

Committed to providing quick and effective disaster relief, UN OCHA and Deutsche Post DHL have extended the successful five-year long partnership for another three years, until the end of 2013.

For both TNT and DHL, their operations in the humanitarian sector represent a cornerstone of their CSR strategy. Also other corporations such as Intel, UPS or Vodafone, for example, have established structured collaborations with humanitarian agencies such as the International Rescue Committee or the WFP, in which they bring their corporate expertise to improve the disaster relief efforts and can add innovative solutions. Maon et al. (2009)  
(DHL 2011)

## 7. Risk Management as an Essential Tool in SC

The perfect situation is an environment without disasters and as much stable as possible. However, as Buatsi (2011) reflects, “The world is increasingly plagued by disasters” and their existence cannot be ignored. A disaster can have several origins, could be produced by humans or by the nature, but its effects have repercussion in the humanitarian and commercial supply chains. It is time now to think about the inevitability of them.

According with the definition of disaster enunciated by Buatsi (2011), an event it is called disaster when “the community’s capacity to cope is overwhelmed and the status quo becomes untenable.” Buatsi (2011), citing Russell (2005), also adds that there are two factors which combination produces the disaster: exposure and vulnerability. Therefore, a reduction of these two factors will achieve also a reduction in the disaster probability.

In this work, it will be defended a correct use of the risk management as the most effective tool for decrease the exposure and vulnerability of the organizations and communities as much as possible.

### 7.1. Arguments for Developing Risk Management

Citing Oloruntoba and Gray (2006), Buatsi (2011) shows the difference between a plan based on response time, which best skill is the agility, and another one based on cost efficiencies, which advantage is the lower costs but need a long-time horizon to be developed. However, with the implementation of risk management both characteristics can be improved at the same time.

Larsson (2011), based on data from IFRC (2008), ensure that the 90% of international relief aid is being designated to disaster response. That year IFRC estimated that each dollar spent on prevention could save even four dollars in emergency response in the future. Looking at this data, the cost efficiency of a proper risk management program could be enough reason for its implementation.

In addition, Blansjaar and Van der Horwe (2011) reflect that the organizations with a response program, or situation-specific scenarios, developed have an advantage in the moment of the disaster and also for the immediate recovery. When a plan of action is already approved the agility of the response is higher because, as Dowty (2011) explains, in that situation the plan can be pulled from where it is filed and be implemented as fast as possible.

Dowty (2011) also says that when communities are organized for risk management, they are easier to help when the humanitarian aid is needed. It can be extended to the commercial sector thinking that when the employees are aware about disasters, and the network is developed keeping in mind the risk management, the disasters' impact can be reduced or even avoided.

Concluding, some disasters can be avoided. If we follow the definition of Buatsi (2011), showed earlier as the reference, it is just necessary to ensure the continuity of the normal process' activity. It is not easy and, in some cases, could be even impossible, but the risk management is a powerful tool for achieve it.

## 7.2. Advices and Recommendations

The risk management has its limits, for instance when the magnitude of the disaster makes it inevitable. However, other times, the origin of some barriers that rest effectiveness to the program is the way the organization implements its risk management.

IFRC (2002), cited by Larsson (2011) identifies some of the barriers affecting the humanitarian sector as: fragmentation, unorganized community, risk management treated as a separate area, and lack of donor support for this project comparing with the disaster relief. These barriers can be seen also in the commercial sector just changing "donors" by "managers".

Speer (2009), cites the report "Managing Risk in Perilous Times: Practical Steps to Accelerate Recovery" conducted by the Economist Intelligence Unit, and shows some recommendations in order to solve the most common problems detected in the commercial organizations risk management programs:

*Risk management must be given greater authority.* It has no sense to have employers developing plans that are not going to have the support of the directive or no one is going to follow them. It is recommended the implication of the senior executives to show the importance of this project.

*Institutions need to review the level of risk expertise in their organization.* It is necessary to focus in risk management and support it with enough resources, human and economic ones. The risk management responsible has to count with the appropriate tools for its work.

*Institutions should pay more attention to the data that appears in the risk models, and must combine this output with human judgment.* This is an important point because it can be considered that the economic crisis started by this reason, when the financial agencies did not take in account the risks of acceptance some of the loans offered.

*Stress testing and scenario planning can arm executives with an appropriate response to events.* For this reason these tools have to be part of the risk management.

*Incentive systems must be constructed* so that they reward long-term stability, not short-term profit. This solution has to be part of the strategy of the organization. The problem is the impossibility of some companies to survive without early profits.

*Risk factors should be consolidated across all the institution's operations.* As Larsson (2011) explains citing IFRC, talking about the humanitarian sector, the implication of the whole organization increases the effectiveness of the program.

*Risk management systems should be adaptive* rather than static. Blansjaar and Van der Horwe (2011) explain that the plans of action have to be revised continuously and updated to maintain them relevant.

Cranfield University School of Management (2002) also published a list of factors affecting the vulnerability of the supply chain and added some advices to reduce their impact:

Focus on efficiency rather than effectiveness. The report explains that some trends of the sector maybe are not the best option in case of a volatile demand environment. Insurances, covering the eventualities, or stockpiling ensuring a buffer against unexpected situations should be taken in account for reduce risks.

Globalization of supply chains. It has a lot of positive results but also can increase the lead times due to the geographical distances of the network. The decision of globalization has to be taken after consider the total cost of the process and not just the purchasing or manufacturer costs. Finally, the emplacement of the activities has to fill the requirements established by the organization.

Centralized factories and distribution. It is easier to manage and could be more efficient but it is also risky. If something goes wrong, the total distribution is affected, in addition, the flexibility is reduced. Lyson and Farrington (2006) recommend also shorter distances of distribution avoiding by this way possible congested transport networks.

The trend to outsourcing. If one step of the chain fails, the whole one can fall down and give the responsibility to others is always risky. The information sharing and possible contractual obligations are critical again.

Reduce the base of suppliers. If a company reduces the number of its suppliers becomes more dependent of them and can lose part of its power of negotiations. It is necessary to select carefully the suppliers and work together developing them. The report recommends the diversification with a “multiple sourcing” strategy.



As Richardson and Price (2011) explain, UN member states also agreed a guiding framework to reduce disaster risk in the humanitarian sector. It is called Hyogo Framework for Action (HFA). As appears in the own HFA document (2007), the goal of the project is “to build resilience of nations and communities to disasters, by achieving substantive reduction of disaster losses by 2015”. To achieve this objective, the HFA plan focus in 5 priority areas:

1. Make disaster risk reduction a priority
2. Know the risks and take action
3. Build understanding and awareness
4. Reduce risk
5. Be prepared and ready to act

Richardson and Price (2011) add the responsibility that the national authorities, the international and regional organizations and institutions and, finally, the civil society have carrying out the disaster risk reduction plans.

NESA, with its project SOPIVA, also published its own recommendations on operational control related with the Risk Management.

According to NESA (2009), the strategic planning process of the organization needs to cover unexpected disruptions in the chain. The risk analysis of the organization should be focused on the internal and external operating environment.

The prioritization of risk management together with the support of functions and processes are, for NESA, the critical factors for the development of continuity management.

The recommendations appearing in SOPIVA are:

*Related with the impact of the operational environment:*

The interaction between the organization and its operational environment is taken into account in functions and processes.

*Related with the developing activities based on risk assessment:*

Regular risk management procedures are in place

The results of the risk management process guide the development of continuity management.

*Related with setting of objectives:*

Measures to manage operational continuity support the objectives of the organization's core functions and processes

*Related with the management of partners and suppliers:*

Continuity management of services has been designed and agreed with partners and suppliers

*Related with incident management:*

Specific procedures for incident management are designed

Crisis Communication procedures have been designed and practiced

Control guidelines for disruption management of critical activities have been prepared and trained and operation has been tested in exercises

The agency, NESAs, does not enforce the organizations to fulfil these points, as it was cited, there are just recommendations. The success of this method is something controversial. Tatham and Hughes (2011), for example, citing Gatterna (2009), explain that “people will do what is inspected, not what is expected.” However the interviews made for this work affirm that a voluntary work often gives better results than an obligatory one.

### **7.3. Collaborative Development of Risk Management Plan Case: Haiti/UPM**

For explain the idea of Buatsi (2011), citing Russell (2005), about the two factors required for the existence of a disaster (exposure and vulnerability), it can be shown an example.

Tatham and Houghton (2011) compares the earthquake of Haiti (January 2010) and the earthquake of Chile (February 2010).

In the case of Haiti, a 7.1, in Richter scale, magnitude earthquake devastated the country. The 90% of the buildings were destroyed and the number of people killed by the earthquake was higher than 225,000. Tatham and Houghton (2011) cite Bilham (2010), explaining that the effects of this earthquake were much worse than any previous magnitude 7 earthquakes.

On the other hand, in the case of Chile, an 8.8 magnitude earthquake (350 times more powerful than the earthquake of Haiti) finished with a result of around 800 dead victims.

As Tatham and Houghton (2011) explain, the pre-existing social conditions for both events were different. Citing Bilham (2010), the construction standards of Haiti were inappropriate for its risky environment. However, Swiss Re (2010) explains that Chile was developed and implemented a highly advanced anti-seismic construction standards taking in account the probabilities of earthquakes. (See Tatham and Houghton 2011)

In an article published by Universidad Politécnica de Madrid (2011), it is explained that the disaster of Haiti made obvious the necessity of adopt risk reduction plans for the future in this country. In the same article it is shown one of the projects started in the country with this objective, “SismoHaiti”.

SismoHaiti is a project developed by Universidad Politécnica de Madrid (UPM) and coordinated by Belén Benito (head of department of topography, geodesy and cartography). The goal is to add knowledge and information to take new preventive steps due to the earthquake risk.

The Project will analyze previous earthquakes in the zone and the geology of Haiti for estimate future movements (for around 50 years). Following the recommendations shown in this chapter and knowing that the results are estimated, the analysis should be reviewed and developed periodically. It is necessary to remind that the risk management should be a dynamic activity.



Figure 29. Image of the study of urban construction risk from SismoHaiti project. Source: Grupo de Investigación de Ingeniería Sísmica, UPM (2012)

The project will keep the two factors that can produce the disaster, the seismic threat and also the vulnerability of the buildings. Yolanda Torres, researcher of UPM, ensures that the vulnerability and obsolescence of buildings in Puerto Principe is too high. For this reason, to develop an appropriate urban plan and to design a fast and effective emergency service, are other important goals of SismoHaiti.

Another recommendation for risk management implementation was the implication of the high levels of the organization. In Haiti’s case, the Director of the National Observatory for Environment and Vulnerability of Haiti (depending from the Environment Ministry), is the example of the governmental support to the project. He ensures that SismoHaiti can allow the achievement of the resistant structure required by the country. (UPM 2011)

The example explained here comes from the humanitarian sector; however, the commercial one is full of other examples where the risk management is shown as a critical tool for the success of the companies.

Peck (2003) cites, as an example, the case of a fire that destroyed a plant of electronic components in New Mexico in 2000. The plant was a common supplier of Nokia and Ericsson and both companies were a priority for the plant. Nokia could respond to the crisis situation securing components from the market due to the close control that it has about its suppliers and its fast response to the plant fail. However Ericsson, that did not keep in mind the risk if this supplier failed, was left with supply shortages and lost around \$400 Million (Peck 2003). As appears reflected in a BBC news article of 2001, the market share of Nokia in 2000 increased from 26.9 to 30.6 while Ericsson decreased until 9.7% of the global market (BBC News 2001).

The global business services of IBM (2008) explain that “the different reactions from similar players to a single event in time has become a key illustration point, showing the benefits of monitoring and managing risks in supply chains.” In definitive, the importance of the risk management in the commercial sector too.

## 8. Survey: People's Opinion about HSC and CSC.

With the aim of know the interest of the people by this topic and the information that they have, it has been made a survey.

The way to collect the information was by questionnaires. This method is easier to fill by the people selected and faster than individual interviews.

### 8.1. Questions

The questionnaire can be divided in three modules. The first one is related with the humanitarian behaviour of the people asked and their interest in this sector. The questions made were:

Are you a member of any Non-Profit Organization?

This question is made in order to know the implication of the person answering the questionnaire with the humanitarian sector. People who answer yes to this question could be considered more interested and active in humanitarian projects.

Do you help economically any humanitarian project?

The affirmative answer to this question also implies a commitment with the humanitarian world. It is less restrictive than the first question but it talks about the economical donations, something that with the crisis period could be affected. To know if the affirmative or negative answer to this question was related with the crisis, it was asked also when happened this support (in the case there was any support)?

Is there any humanitarian project you are interested in nowadays?

The question tries to know if there is any interest for the humanitarian world even if there is not a hard commitment with it. It can be shown also as a question about the information that people have about the humanitarian projects.

What is, in your opinion, the best humanitarian organization?

This is an interesting question that could show the appreciation of the humanitarian organizations by the people. It was added the question “why?” to know what makes an organization better than other in the humanitarian sector, at least for the people who answered the questionnaire.

The second module is related with the logistics of humanitarian and commercial sectors. In this case the answers were guided with a number scale from 1 to 4. Changing the way to answer adds dynamism to the questionnaire and could be more attracted for the people asked. The scale of 4 possibilities avoids the “middle” answer obtaining more meaningful results.

What is your opinion about...

... the work of Non-Profit Organizations?

The aim of this question was to know the opinion about the humanitarian organizations. A 4 grade in the answer of this question represents the importance of the NPO's work and the good image that they have even for people with a low commitment with humanitarian projects.

... the importance of logistics in the humanitarian sector?

This question wants to ask about the appreciation that people have about the logistics in the humanitarian world. Through this work, it has been shown the critical importance of logistics for the sector but if it is not recognized by people, it will be difficult to increase the investment on it.

... the effectiveness of humanitarian logistics?

... the efficiency of humanitarian logistics?

... the effectiveness of commercial logistics?

... the efficiency of commercial logistics?

These questions have been made to compare directly the effectiveness and efficiency of both sectors. Considering the effectiveness as the ability to achieve the objectives; and the efficiency as the capacity of do it with the less resources consumption possible.

The last module is more related with the commercial sector and the links that this sector has with the humanitarian one.

In your opinion, which commercial company is more implicated with the humanitarian sector?

As happened already with the question about the best humanitarian organization, the aim of this question is to know if the people have enough information about the companies and their projects to can evaluate the best one.

Are you a customer of any company because of its humanitarian behaviour?

This is maybe the most important question for the commercial sector. Have the humanitarian projects developed by companies a direct impact in the number of customers?

There was also a question about the nationality. As it was shown earlier in this work, the globalization makes companies and organizations to think globally. For this reason, it was more interesting to obtain a multicultural survey than only a local sample group.

Finally, there was an extra point where the people questioned were free to write whatever they thought it was relevant related with the topic of the survey.

Counting the option of comments and the “extra questions”, the total amount of questions were 16. There are much more questions that could be interesting but for the same reason that this method was selected, it is important to do not make a long questionnaire because the people asked can become tired and do not answer any question or do it randomly.

## **8.2. Sample group**

To obtain results with a technical base (especially for the second module), the sample group had to be selected from people with any knowledge about logistics. To achieve that, and also the multicultural environment, the sample group chosen was the students of an international course of logistics imparted by TUT and TAMK.

Using this selection process, the total number of questionnaires filled was 30. The total amount of nationalities was 13, from Africa, America, Asia, and Europe. In Table 7 it can be seen the number of participants of each country and, in Figure 30, a graph where the distribution of nationalities is more clear.

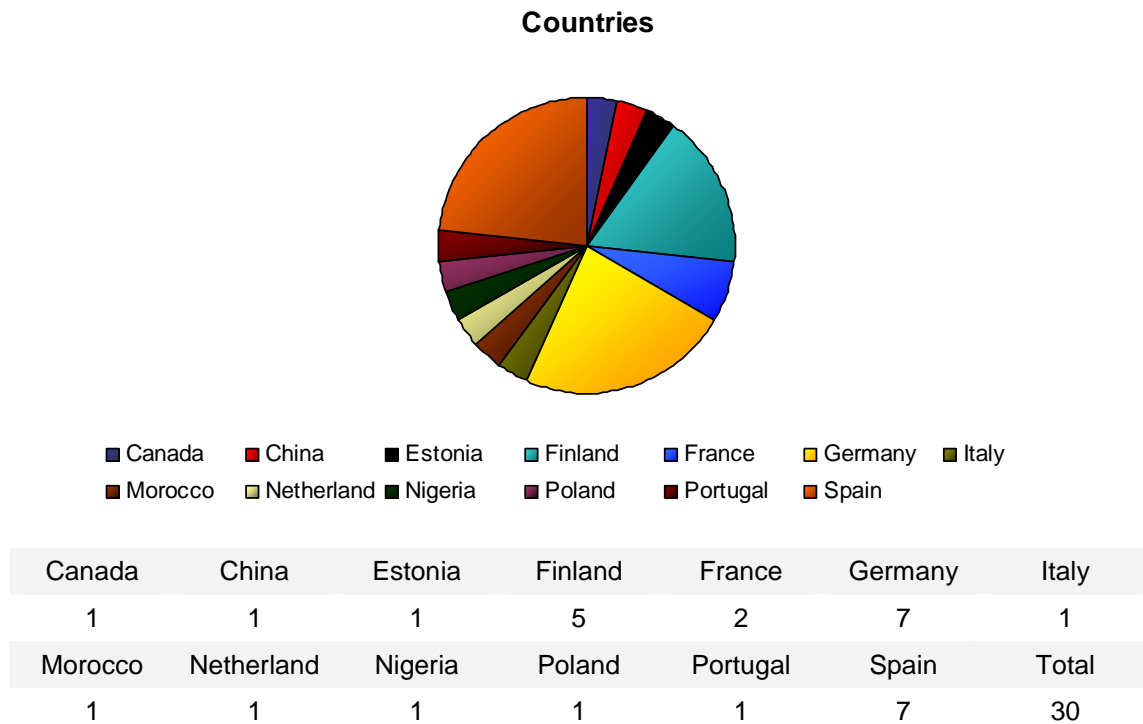


Figure 30 and Table 7. Number of participants in the survey classified by countries.  
Source: Own elaboration.

The age of the participants was estimated between 20 and 25 years old. It means that the people asked are already consumers and they will be that for a long period of time (around 60 years).

There was not any differentiation by gender.

### 8.3. Results

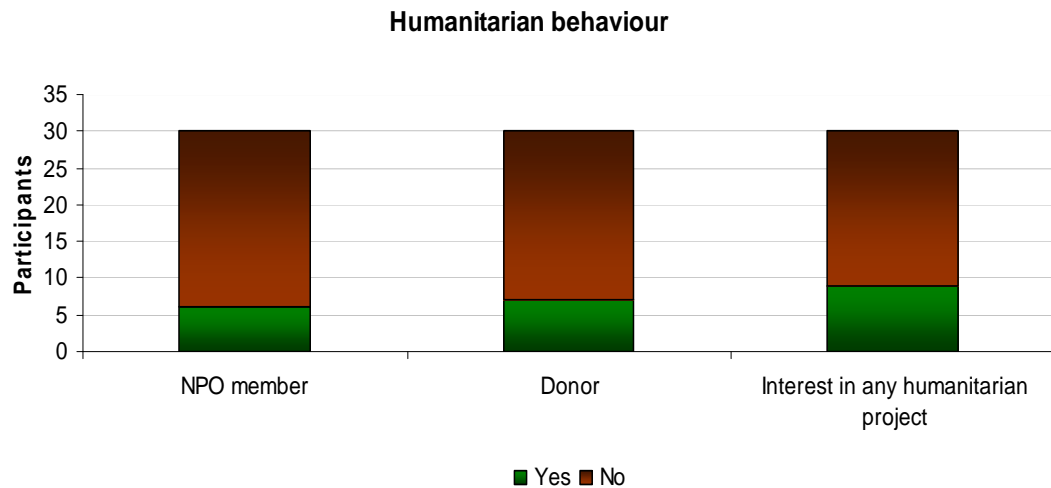
At this point, it will be shown the results obtained from the questionnaires ordered by modules.

From the first module, to the questions:

- 1.1. Are you a member of any Non-Profit Organization?
- 1.2. Do you help economically any humanitarian project?
- 1.3. Is there any humanitarian project you are interested in nowadays?



The results were:



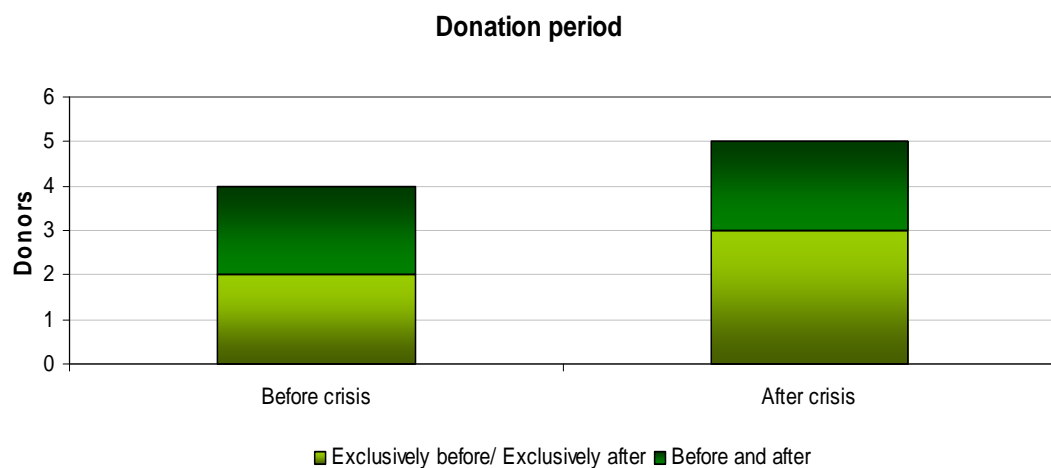
NPO member		Donor		Interest in...	
Yes	No	Yes	No	Yes	No
6	24	7	23	9	21

Figure 31 and Table 8. Number of participants with any implication within the humanitarian sector. Source: Own elaboration.

To the extra question:

#### 1.2.1. When did you support economically any humanitarian project?

The results were:



Before Crisis	After Crisis	Both
2	3	2

Figure 32 and Table 9. Number of donors classified as before or after the economic crisis period. Source: Own elaboration.

To the question:

1.4. What is, in your opinion, the best humanitarian organization?

The results show 3 NPOs cited. 4 participants did not answer the question; this result was filed as Not Applicable (N/A). The distribution of the answers was:

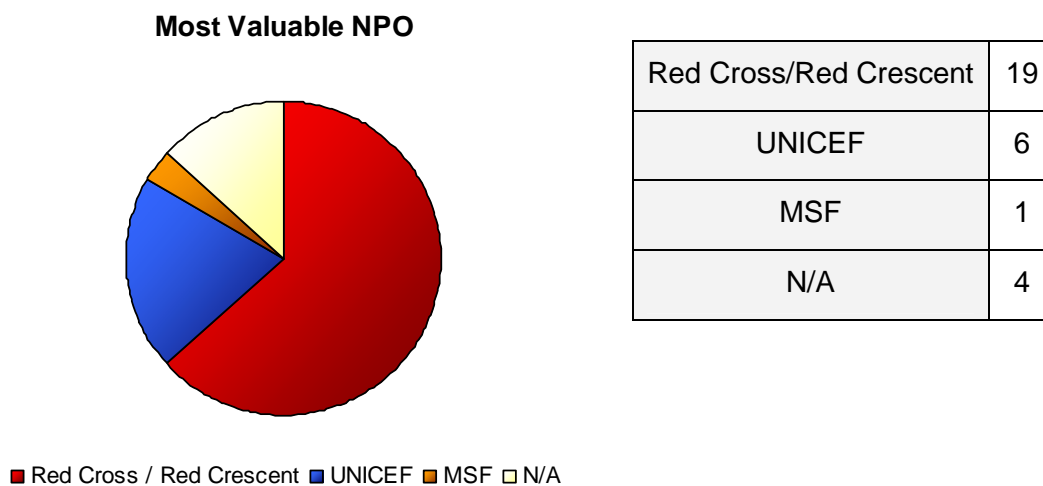


Figure 33 and Table 10. Distribution of most valuable NPOs selected by participants. Source: Own elaboration.

From the second module, to the question: What is your opinion about...

2.1. ... the work of Non-Profit Organizations?

The answers were:

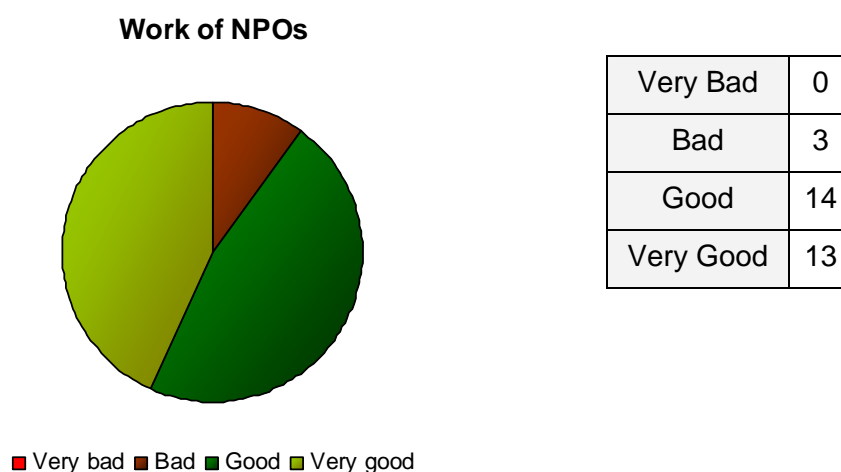


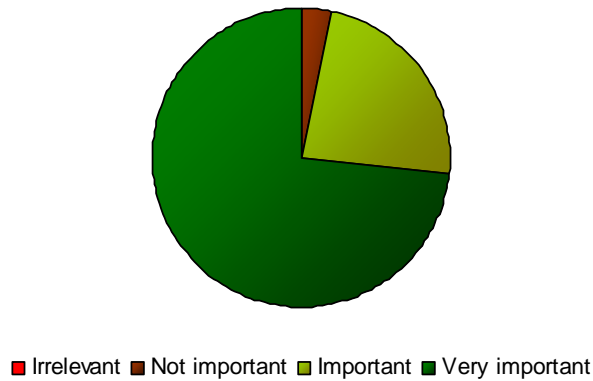
Figure 34 and Table 11. Distribution of results about NPOs' work. Source: Own elaboration.

To the question: What is your opinion about...

2.2. ... the importance of logistics in the humanitarian sector?

The answers were:

**Importance of Logistics in Humanitarian Sector**



Irrelevant	0
Not Important	1
Important	7
Very Important	22

Figure 35 and Table 12. Distribution of results about the importance of logistics in humanitarian sector. Source: Own elaboration.

To the question: What is your opinion about...

2.3. ... the effectiveness of humanitarian logistics?

The answers were:

**Effectiveness of Humanitarian Logistics**



Very Bad	0
Bad	9
Good	17
Very Good	4

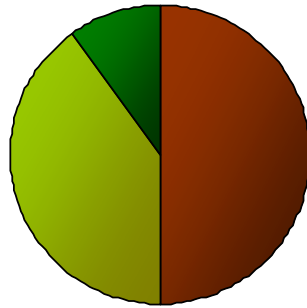
Figure 36 and Table 13. Distribution of results about the effectiveness of humanitarian logistics. Source: Own elaboration.

To the question: What is your opinion about...

2.4. ... the efficiency of humanitarian logistics?

The answers were:

#### Efficiency of Humanitarian Logistics



Very Bad	0
Bad	15
Good	12
Very Good	3

■ Very bad ■ Bad ■ Good ■ Very good

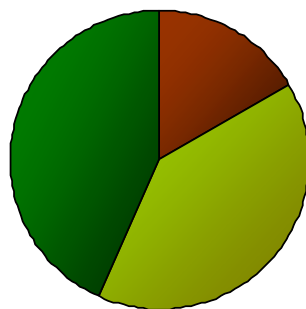
Figure 37 and Table 14. Distribution of results about the efficiency of humanitarian logistics. Source: Own elaboration.

To the question: What is your opinion about...

2.5. ... the effectiveness of commercial logistics?

The answers were:

#### Effectiveness of Commercial Logistics



Very Bad	0
Bad	5
Good	12
Very Good	13

■ Very bad ■ Bad ■ Good ■ Very good

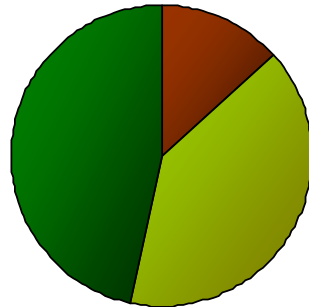
Figure 38 and Table 15. Distribution of results about the effectiveness of Commercial Logistics. Source: Own elaboration.

To the question: What is your opinion about...

2.6. ... the efficiency of commercial logistics?

The answers were:

### Efficiency of Commercial Logistics



Very Bad	0
Bad	4
Good	12
Very Good	14

■ Very bad ■ Bad ■ Good ■ Very good

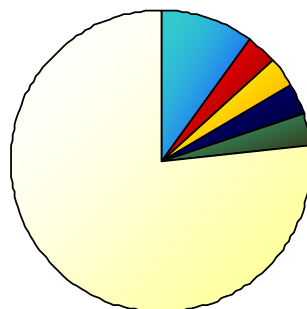
Figure 39 and Table 16. Distribution of results about the efficiency of commercial logistics. Source: Own elaboration.

Finally, from the third module, to the question:

3.1. In your opinion, which commercial company is more implicated with the humanitarian sector?

The results show 5 companies cited. 23 participants did not answer the question; this result was filed as Not Applicable (N/A). The distribution of the results was:

### Most Humanitarian Companies



Microsoft	3
McDonalds	1
IKEA	1
Société Générale	1
Oral-B	1
N/A	23

■ Microsoft ■ McDonalds ■ Ikea ■ Societe Generale ■ Oral-B ■ N/A

Figure 40 and Table 17. Distribution of most humanitarian companies from the commercial sector, selected by participants. Source: Own elaboration.

To the question:

3.2. Are you a customer of any company because of its humanitarian behaviour?

The results were:.

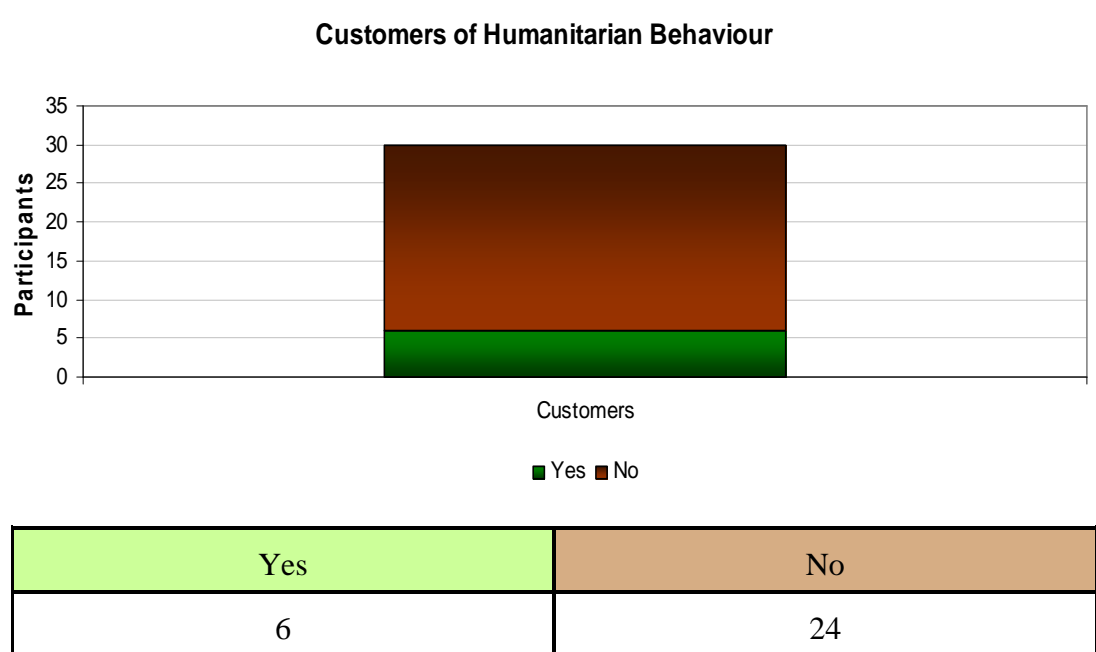


Figure 41 and Table 18. Number of customers who select a company because its humanitarian behaviour. Source: Own elaboration.

The extra comments given by the people questioned are analyzed in conclusion's point.

## 8.4. Survey's Conclusions

The survey reflected several interesting results that will be explained more carefully in this point. It will be followed the same order than the one exposed previously.

The low number of affirmative answers for questions 1.1 and 1.2 was expected. As Burk (2011) reflected already, the number of donors in USA was distributed by ages as: 12% under the age of 35, 61% between 35 and 64, and 26% were age 65 or older. Coming back to the survey of this work, the sample group was between 20 and 25 years old, according to this range of age the answers are coherent with the global real data.

The answers to question 1.2.1 reflect a low importance of the crisis period related with the donations. However, it has to be taken in account again the age of the sample group. Because of the short age of the people questioned, could be possible that some of them

could not donate any money before the crisis due to a dependency of their parents or tutors.

However, the affirmative answers to question 1.3 were lower than expected. Some of the extra comments suggest that the reason why the 70% of the participants were not interested in any humanitarian project was the low level of information that they have about them.

The results of question 1.4 show a clear leadership in the humanitarian sector in opinion of the participants of the survey. A 63% of the people questioned chose Red Cross/ Red Crescent as the best humanitarian organization. Some respondents even added that it was the only one they knew. This is an example of how the visibility of the NPOs is important to achieve their goals, as it is being shown along this work the biggest organizations have a clear advantage in front of smaller ones.

Only other two organizations appear in question 1.4, UNICEF and MSF. The reason of the appearance of UNICEF could be also due to its visibility. As an agency of the UN, UNICEF is other of the biggest organizations within the humanitarian sector. In addition, the partnership with FC Barcelona gave more publicity (and resources) to this agency. Finally, MSF is another well known organization with an annual budget higher than 400.000 million \$ [see Table 2, point 3.2].

From results to question 2.1, it can be explained partially the answers in 1.3. The 90% of respondents think that the work of NPOs is good or very good. It could mean that even without a direct commitment with the humanitarian sector, the participants agree with the goals of the NPOs and it also explain the good image of this agencies. Again, the low interest demonstrated in question 1.3 could be due to a lack of information.

In the opinion of the participants, as it was shown also in this work, the logistics have a core importance in the humanitarian sector. More than 96.5% consider the logistics as important or very important, being more than 73% the second ones. This idea is critical for achieve a development in humanitarian performance because the investments in logistics can be higher with a better appreciation of it by donors.

Comparing answers from questions 2.3, 2.4, 2.5, and 2.6 the result is that in the opinion of the participants, the effectiveness and, especially, the efficiency of commercial sector is higher than the ones of humanitarian world. This result justifies the knowledge sharing where the humanitarian agencies can learn from the commercial companies.

The reason why the effectiveness of humanitarian sector is considered as good or very good for 70% of the participants while the efficiency receives 50% of negative opinions is because people questioned think humanitarian organizations achieve their objectives but expending more resources than necessary. The commercial sector obtains 83% of good or very good responses about its effectiveness and 86.7% of positive answers about its efficiency.

The relative low difference between the effectiveness of humanitarian and commercial sector is due to the grade of positive answers. While, for the humanitarian sector, the 19% of the positive answers were “very good” (13.3% of the total), in the commercial sector this option represents the 52% of the positive answers (43.3% of the total).

However the clearest difference is in efficiency. While only a 10% consider that humanitarian logistics efficiency is very good, the 46.6% of the respondents think that the efficiency of commercial logistics is very good.

According to the results of question 3.1, the main idea is the high level of N/A answers. The 80% of participants did not find any company with a recognizable humanitarian behaviour according to its activities.

Between the companies selected, the most repeated one is Microsoft. The visibility of Bill Gates and his foundation (that works in partnership with the Microsoft’s Corporate Citizenship Department) could explain this recognition. However, Microsoft has enough programs to be considered as a “humanitarian” company like the donation of \$844 millions to 46,886 NPOs in 2011 (Microsoft 2012).

McDonalds’ CSR achieves more visibility also due to the Ronald McDonald House Charities Foundation, which moneyboxes can be seen in all McDonald’s restaurants. This company also helps humanitarian relief agencies. For instance “from January 16-22, 2010, all McDonald’s restaurants in 19 Latin American countries donated 50 cents from the sales of Big Mac sandwiches and Big Mac Extra Value Meals” and added \$500.000 from McDonald’s Corporation to achieve a total amount of \$1,647,000 for Haiti. (McDonalds 2012)

IKEA has important partnerships with humanitarian organizations as UNICEF, WWF or Save the Children. (IKEA 2010)

Oral-B, as part of P&G, collaborates with programs as the Children’s Safe Drinking Water where more than 3 billion litres of purified drinking water in more than 60 countries helped save more than 16,000 lives. (P&G 2012)

Finally, the results to the question 3.2 were expected. 20% of participants answered that they are customers of any company because of the humanitarian behaviour of the company. The percentage can be low but if we take in account the percentage of participants that could not recognize a humanitarian behaviour in any company, it reflects that the percentage of “non-consumers” is the same.

From the extra comments there is an addition to this question. Some of the participants recognized to do boycott against the companies with clear “non-humanitarian” behaviour. This is dangerous for the companies because, in the commercial world, it is well known that, even when a good image does not ensure the success of the company, a bad one can make the company fall down.



Other extra comment was the lack of cooperation between humanitarian organizations. This problem could be solved by the Cluster Approach, if the organizations accept the leadership of other one.

The most repeated extra comment was the necessity of build links between the commercial and humanitarian sector to improve mutually their skills. This idea supports the topic of this work.

There is another important conclusion from this survey, the importance of information and visibility. The small NPOs are not able to increase their resources if they do not obtain more publicity. And the commercial companies have to show their humanitarian policies if they want to obtain successful results from them.

## 9. Conclusions

The main idea of this work was to prove if there was a real possibility of improving the supply chain management mixing the commercial and humanitarian logistics skills; and, if this was proved, then study the way to achieve it. However, the work does not forget the crisis period that affects the world's economy at this moment and the repercussion that it has for both sectors and also for developing mutual collaborations.

Within the **commercial sector**, the **crisis affects** it by:

**Reducing the demand** of products and services

Making **consumers more selective** with their purchases.

Companies have more **problems to finance** their activities and those ones with worse results can even go to bankrupt.

On the other hand, the lower level of benefits, or even a reduction in the number of companies, mean fewer work places; for this reason, in order to increase the work places, the **governments try to help** commercial companies by regulations with more benefits for them.

In the **humanitarian case**, the **crisis affects** the sector by:

**Reducing in public donations**, which, for some organizations, are the principal funding support.

On the other hand, as it was explained during the interviews, the lower demand in the commercial sector **increases the offer of suppliers** interested in humanitarian projects, because, with or without crisis, disasters continue happening and disaster relief agencies need products and services offered by the commercial chain. This higher number of suppliers interested in humanitarian projects **increases the negotiation power of humanitarian agencies**.

About private donations and volunteers, Finnish Red Cross has not realized any reduction of its numbers during this period. It could be because the Finnish crisis is not as critical as in other countries, but the answers to the survey made to 30 students of TUT also reflects that people who collaborate economically with any humanitarian organization do it independently of their country and crisis period.

The crisis period has introduced the humanitarian sector to the commercial one showing its demand opportunity. But this is not the only benefit for the commercial sector, now that consumers are more selective, companies need to differentiate their products or services and, if they cannot do it in price, they need to add value searching alternatives. The survey of this work shows the **good acceptance** that **humanitarian projects** have

**within the society** and how **commercial-humanitarian collaboration** could be received as **positive by consumers**. In addition, due to the reduction of public donations, the humanitarian organizations that could be suspicious about work with commercial companies due to the possibility of compromise their humanitarian principles, are now more receptive to their support.

According to these ideas exposed, **the crisis period is an opportunity for developing commercial-humanitarian supply chain relationships**.

Analyzing the actual situation of commercial and humanitarian logistics nowadays, there is one characteristic that can explain some other ones, the relative **“youthfulness” of humanitarian supply chain**. While the commercial supply chain has been studied and developed since long time ago (just during the last 50 years can be cited new methodologies as Total Quality Management, Just in Time or Lean Policies), the different logistics research studies have not focused in humanitarian sector until present century.

The knowledge collected about commercial logistics throughout the history is also really important and has allowed the development of useful tools and technologies for supply chain management. Due to its “youthfulness”, these aspects are less developed in humanitarian case, and this lack of knowledge also affects the “know how”, related with these technologies, of volunteers and professional workers in this sector.

Other factor that needs to be developed is the measurement, while the commercial sector has developed its measures to optimize them according to its goals, the humanitarian supply chain has only adapted the commercial indicators instead of search their own ones.

**The commercial supply chain is a reference in efficacy and efficiency performance.**

As the survey of this work reflects; the commercial sector obtained 83% of good or very good responses about its effectiveness and 86.7% of positive answers about its efficiency. However, this is not enough for customers nowadays. Companies are developing their own **CSR** strategies in order to **improve** their **image** and add value to their activities. This aim allowed the commercial sector to be also a reference in **“green logistics”**, those logistics that take care about the environment responsibility.

**The good image is one of the strengths of the humanitarian sector.** As the survey shows, 90% of respondents think that the work of NPOs is good or very good. However, the **environment responsibility** has **not been too developed** by this sector. The necessity of a fast response and the chaotic conditions after a disaster have been used as excuses for relegate this problem to a secondary stage, but this attitude can produce future problems as longer recovery periods, infections, extra costs, etc.

The **other advantage of humanitarian agencies is their flexibility**; the adaptability of these agencies to operate under high uncertainty conditions with short time responses and all around the world. But, as the interviews confirms, usually the strategy followed

by humanitarian agencies is a “push” one; this can imply higher costs in order to reduce delivery times.

Different authors agree that the **inflexion point** of **humanitarian logistics** is the tsunami of **2004**. After this disaster the humanitarian sector tried to develop its strategies and several studies started to appear. **The most modern strategy within the humanitarian sector**, as it was explained during the interviews, **is the Cluster Approach**. This strategy tries to unified the efforts of the different agencies in order to increase their results reducing time and costs. It has to be developed by experience but in the opinion of humanitarian professionals, it will be a useful approach for the activities of this sector.

Finally, talking about the characteristics of each sector, it has to be taken in mind the origin of the incomes in each one. While the commercial supply chain depends on its sales, the humanitarian one is financed by donations. The voluntary aspect of humanitarian aid, do not looking for profits, can be understandable for the interest in helping other people, something that can also report personal benefits if we keep in mind the higher levels of Maslow’s pyramid. This factor, in addition to the **humanitarian principles**, **must be understood by the commercial companies** in order to establish further relationships.

Once the characteristics of each sector have been understood, it can be seen the benefits of common collaboration. From the survey, this collaboration was suggested directly by people questioned as extra commentaries.

**Humanitarian organizations can learn from commercial experience** trying to increase its **efficacy, efficiency, and sustainability**. These organizations can be helped by the **technology** developed from the commercial sector and its **infrastructures**. Finally, the **economic support** that commercial companies can inject into humanitarian sector could help these agencies **to achieve more projects**. This support is even more important for humanitarian logistics department because donors historically have seen it as a secondary one.

**Commercial companies can take advantage of humanitarian good image** including this collaboration in their CSR strategies. They can learn from **humanitarian flexibility and adaptability** forming employees with these skills and **improving their leadership capacity**. While training is positive and can increase the skills of professionals from each sector, as the interviews showed, the **field experience** is unique to develop these skills; and the humanitarian projects can add this knowledge to commercial professionals. As the humanitarian activities can also report benefits in the **esteem and self-actualization** of employees, this **collaboration could be an extra motivation** for them. Finally, it cannot be avoided the market of this sector, not only the **direct sales** that disaster relief implies, also the possibility of **developing future markets** that nowadays are in a recovery period.

This work also studied the different ways of collaboration, depending on the commitment of the organizations interested. For example, if the commercial company only wants punctual publicity and the humanitarian agency needs a specific donation for any of its projects, they can collaborate being the agency who offers the visibility of the project as compensation for the donation received from the company.

However, this work concludes that a **longer relationship allows the achievement of more benefits**, concretely those ones exposed earlier. Particularly, this study encourages the **adoption of commercial-humanitarian partnerships**.

Two cases for study commercial-humanitarian partnerships were exposed in this work. In TNT/WFP case, the company has invested €51 million since 2002. As also happens in DHL/UNOCHA case, the company has designated some employees to give logistics support to its humanitarian partner during emergency situations. WFP is the responsible of training the volunteers and during this training the employees acquire the skills required for emergency responses. But the commercial companies can also be the coaches, as in the case of DHL, this company is training airport staff in Asia with its program GARD to prepare these airports for cases of disaster. Other advantage of these partnerships is the “InfoComm Specialist” from TNT, with this idea, it can be increased the visibility of the project and the collection of data from the field. As TNT explains, this relationship does not report benefits only for humanitarian organizations, TNT and DHL recover their investments by publicity and experience.

The **partner selection** is usually the **most important decision** in this point, due to the characteristics of each sector, but for this kind of partnership this factor is even more critical. The commercial company has to keep in mind its competences and goals to select the organization that can add value to its business (and which can need the company’s skills). The humanitarian agency cannot compromise its principles for this relationship and this requisite must be a priority selecting a partner from the commercial sector.

Some important advices collected in this work related with partnership, in addition to the partner selection are:

- Importance of the **contract**, where everything should be clearly redacted and agreed by both partners,

- Definition of **responsibilities** since the beginning of the relationship

- Correct **integration** of both parts to allow effective information, material and human flows between them.

NESA/HVK already realized the importance of partnerships to ensure the security and continuity of respective supply chains, for this reason this public institution is developing the partnership between public and private companies. This idea can be extended to the commercial-humanitarian relationships. An additional argument for this strategy is the development of **risk management** programs. This work shows the

**benefits in cost and time reduction** of this initiative. As it was affirmed during the interviews made for this work, “**in an emergency situation, the model of what to do is the most important help**, independently of the name of the companies affected”.

The case of Haiti's earthquake shows the importance of risk management programs. This earthquake, with much lower intensity than Chile's one, produced almost 300 times more victims. The main problem identified was the buildings, which were not prepared to support the earthquake. UPM offered its knowledge to develop maps and help in the elaboration of a new legislation to implement risk reduction plans in the country. By this way the university obtains experience and develops new knowledge while Haiti's government try to avoid future disasters like the past one. The success of this project is based also in the support by both parts, the university (that has designated one group of researchers for this project) and the government of Haiti (that created the National Observatory for Environment and Vulnerability, which is the responsible of this program). This case reflects how the **collaboration between disasters** (for example developing risk management programs) **is more effective than during them**.

Several recommendations for **implement a proper risk management program** have been published. This work has collected some of them being especially interesting the next ones:

Necessary **support and implication** of the whole organization.

Combination of data and personal judgment (acquired by knowledge and experience).

**Dynamism** of the program being adapted continuously.

Usefulness of stress tests and scenario planning.

Development of **continuity management** guided by the risk management program.

Constant **measurement** of the factors related with this continuity to identify any problem that could suppose future disruptions.

The final survey also reflects another important conclusion, the **core factor of visibility**. Only 20% of people asked recognized themselves as customers of any company because of its humanitarian behaviour. This is a low percentage but when they are questioned about what company has the best humanitarian behaviour, the 80% do not know anyone distinguished by this factor. These answers suggest that a higher visibility of commercial-humanitarian collaboration programs could increase the number of consumers due to these strategies.

The visibility was analyzed in this work also previously. In the commercial case, the publicity has well known repercussion in **sales** and it is study by marketing departments. However, the humanitarian organizations also need visibility to attract **donations** to their projects. In both sectors, the size of the organization is an important

factor and one of the reasons is because as bigger is a company (or humanitarian agency) as more visibility can acquire.

This work has shown that, by **mutual collaboration**, commercial and humanitarian sectors can improve their supply chains in a “**win-win**” **situation**. Even though a cross sector relationship can create some problems, the importance of potential benefits is enough to try it. Mutual respect and understanding need to be achieved to maintain the special characteristics of each sector.

From all the conclusions exposed, this work wants to serve as a tool to encourage the development of these commercial-humanitarian collaborations and to open further research of this topic with special focus on:

- Improving the visibility of humanitarian projects where the commercial companies are involved.

- Increasing the publicity of public institutions that are already promoting projects to improve the response of the supply chain in emergency situations.

- Creating awareness in society about the importance of the humanitarian sector in a world plagued of disasters and showing possibilities of interaction with the commercial sector.

- Conducting a survey with a higher number of participants and with less restrictive selection criteria for the sample group in order to obtain more general results useful for the market.

- Thinking of ways to enhance the cluster approach as an important tool to improve the cooperation within the humanitarian sector; thinking about the opportunities that the commercial sector can also offer to it.

- Developing specific indicators for the humanitarian sector to allow a reliable measurement of its performance and giving a reference to donors (such as commercial companies) to know the effectiveness of their investments.

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Table 18. Number of customers who select a company because its humanitarian behaviour. Source: Own elaboration



## APPENDIX

Interviews made for this work:

Ms. Raija Viljanen, Logistics Manager of NESA/HVK.

Helsinki, Finland (03/10/2011)

Mr. Ari Mäntyvaara, Logistics Coordinator of Finnish Red Cross.

Tampere, Finland (22/11/2011)